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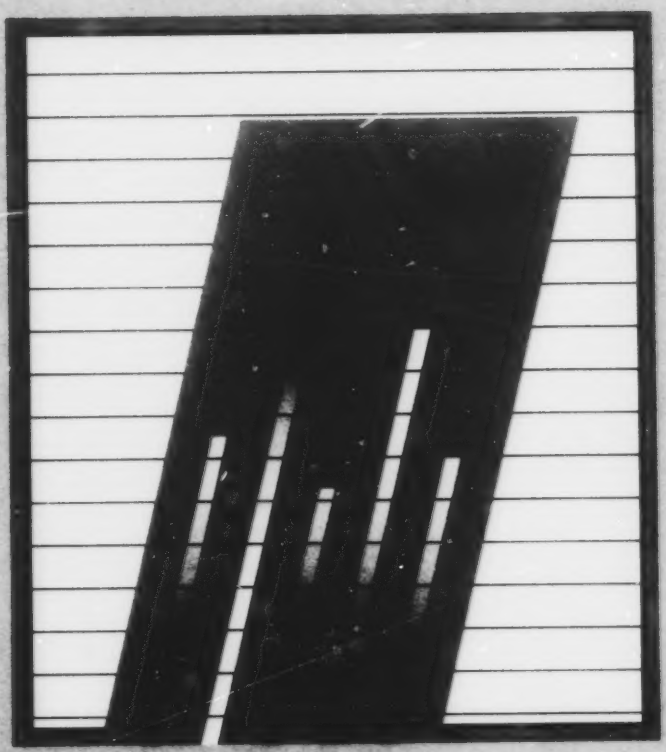
HIGHER EDUCATION IN CANADA



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HIGHER EDUCATION IN CANADA

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TABLE OF CONTENTS

Preface *5*

1. **Introduction: Higher Education in Canada** *7*
   Alexander D. Gregor

2. **Higher Education Systems in Canada** *15*
   Michael Skolnik

3. **Higher Education Organizations** *27*
   Donald C. Savage

4. **The Staff of Post-Secondary Institutions** *37*
   Sheryl L. Bond and Gilles G. Nadeau

5. **Students** *47*
   Norman Uhl and Anne Marie MacKinnon

6. **Programs** *59*
   Jeffrey Holmes

7. **Research** *67*
   Charles H. Bélanger and Robert Lacroix

8. **The Service Function of Canadian Higher Education in Canada and Abroad** *75*
   Claude Lajeunesse and Robert Davidson

9. **Higher Education as a Field of Inquiry in Canada** *83*
   John D. Dennison

10. **Conclusion** *93*
    André Girard and Norman Uhl

Appendices

General Structure of Education in Canada *99*
Key Institutions and Organizations *100*
Statistical Sources to Higher Education in Canada *102*
Guides to Canadian Higher Education *103*
About the Authors and Editors *104*

Figures

4.1 Number of Full-Time Post-Secondary Teachers, Canada, 1961-62 to 1991-92 *38*

4.2 Full-Time Faculty by Rank, Canada, 1977-78 to 1987-88 *39*

4.3 Age Distribution of Full-Time Faculty, Canada, 1978-79 and 1988-89 *40*

4.4 Full-Time Female Faculty by Rank, Canada, 1977-78 and 1987-88 *43*

5.1 Full-Time Post-Secondary Enrolments, Canada, 1951-52 to 1991-92 *48*

5.2 International Students in Canadian Post-Secondary Institutions by Level of Study, 1975 to 1989 *55*

Tables

5.1 Distribution of Full-Time Post-Secondary Students, by Sex and Level, and Proportion of Female Students at Each Level, Canada, 1975 to 1990 *50*

7.1 External Support to Research Carried Out in the University Sector by Source of Funds, 1971-72 to 1989-90 *69*

7.2 Estimation of R&D Expenditures in the Higher Education Sector, 1979-80 and 1986-87 *71*

7.3 Graduate Studies Degrees Awarded in Canada, 1980 and 1988 *73*

9.1 Research Themes in Canadian Higher Education, 1960-1990 *84*

PREFACE

This work is the result of a joint undertaking between the Department of the Secretary of State of Canada and the Association for Canadian Studies. The study involved collaboration on the part of a substantial number of scholars from across Canada; and it is a credit to their professional commitment that the project was able to be mounted and completed within a remarkably brief time. It is equally a credit to the very efficient support provided by the Association for Canadian Studies; particular thanks are due to Béatrice Kowaliczko, Vince Masciotra, Ann Braithwaite and Claire Martin. Particular acknowledgement is also owed to Lucie Nobert of the Department of the Secretary of State for her role in putting together the final manuscript.

An anthology of this sort creates particularly complex editorial demands — to ensure reasonable commonality in format and style, to ensure comprehensive treatment of the topic without overlap and duplication among the chapters, to provide appropriate and balanced treatment of the different sectors within the post-secondary system, and to reflect the regional and language distinctness that is at the very heart of Canadian education. In this regard, special thanks are due to co-editors Paul Gallagher and Lise Tremblay.

Higher Education in Canada represents the first effort of its kind to describe the Canadian post-secondary system in its entirety, bringing together the two major realms of the community colleges and the universities. It is the hope of those involved in its preparation that this work will assist not only in providing a better understanding of that system, but also in encouraging further study of a critically important sphere of activity.

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CHAPTER 1

INTRODUCTION: HIGHER EDUCATION IN CANADA

Alexander D. Gregor

Higher education in Canada (or post-secondary education, as it tends to be called when not limited to the university system) is rather difficult to define, as the range of institutional or program types that will be included under that rubric can differ from province to province. For the purposes of national data collecting, Statistics Canada has employed a definition which:

> . . . encompasses all education programs and research activities of universities, as well as certain programs in non-university (college level) institutions, such as community or regional colleges, CEGEPs, technical institutes, and hospital and regional schools of nursing. To be included as post-secondary, programs in college-level institutions must meet certain criteria, essentially that they require high school graduation for admission, last at least one school year, lead to a certificate or diploma, and are not classified as trade/vocational.

It is worth noting, however, that there is an emerging tendency, particularly in Western Canada, to draw the definition of "post-secondary" rather more broadly, reflecting the age of the learner rather than the character of the program per se. This definition would thus encompass such activities as adult upgrading, English as a Second Language (ESL) for adults, college preparation, vocational training, and the like.

As has been the case in all of the countries of North, Central, and South America, the higher education system of Canada has been based on ideas and practices brought from Europe. In the years since those early colonial roots were planted, however, the unique political, economic, social, and geographical circumstances of these countries have shaped systems of quite distinct characteristics. In Canada's case, these unique circumstances are several, but perhaps none has

been quite so significant for higher education as the country's political constitution. Canada was brought into being as a country in 1867 by the *British North America Act*, and initially consisted of the present provinces of Ontario, Quebec, Nova Scotia and New Brunswick. The *BNA Act*, as it came to be called, defined Canada as a federal state, with a clear division of powers and responsibilities between the federal government and the governments of the constituent provinces and territories. Among these powers was one which at the time had little significance for the federal government; by article 93 of the *BNA Act*, education was assigned to the exclusive jurisdiction of the provinces.

A century later, Canada would comprise some ten provinces and two territories, all of which jealously guarded that autonomous authority (notwithstanding the irony that the funding for the higher education system by now came principally from federal coffers). By this time, however, education, and particularly higher education, was coming to be seen as the key to Canada's competitive survival in a very different world. The relatively modest technological and research base the country possessed as it moved into the second half of the twentieth century nurtured a tendency on the part of all segments of society, public and private, to turn to the post-secondary institutions to address any and all needs — from expert advice to governments and the community, to transfer of technology — as well, of course, as the traditional and not inconsequential tasks of scholarship, teaching, and professional and technical preparation. Despite this daunting range of social expectations, however, observers inside and outside the country noted with concern the absence of any coherent or co-ordinated system of education, and the apparent lack of political will to forge such a system. Complicating the situation still further has been a constitutional interpretation that *training* — as opposed to *education* — is a legitimate role of the federal government in its responsibility for economic development. (This is an ambiguous distinction and one characterized by a persistent blurring of the edges of the two categories.) For the past three decades in particular, then, higher education, insofar as it has involved the realm of governments and financing, has been a story of the search for ways by which a national system could be forged.

Notwithstanding the remarkable degree of decentralization in Canadian higher education, it is interesting to note that the powerful traditions of the university sector have preserved a quite pronounced similarity from province to province. In the case of the community college sector, however, provincial jurisdiction and the different needs of the various regions have resulted in a diversity probably more pronounced than in any other country of the industrialized world.

A number of other factors have affected and shaped the development of higher education in Canada. Not least of these has been the country's immense geographical expanse. Bounded by three oceans, Canada's land mass is now the largest in the world. But in comparison, its population — about 26 million — is relatively small. The implications have been several. For one thing, major portions of the country are uncongenial to agriculture and have therefore remained sparsely populated and rather inaccessible. The bulk of the population inhabits a relatively thin band along the border with the United States. This dispersion across thousands of kilometres has resulted in strong feelings of regionalism and significant regional disparities in economic development — factors which influenced public policy touching on higher education, and appeared as well in the search to provide access to those geographically removed from the major population centres.

Significant also has been the country's economic development, which until recent years was characterized by a strong dependence on the production of primary resources and, where secondary industry existed, by a preponderance of foreign capital and foreign control — the so-called "branch plant" economy. In consequence, Canada has not had a strong tradition of industrial and technological research and development and, in the matter of its workforce, it has had a tendency to import the skilled workers it required. With the advent of the 1970s and 1980s, however, it became increasingly clear that this approach would no longer suffice. The development of graduate education in the universities and the emergence of the community college sector reflected in part a new determination to produce an indigenous highly skilled workforce; and a range of government initiatives was aimed at developing a strong and competitive "R&D" base within the country. Although the university would remain the country's principal agency for research — and particularly basic research — an increasing emphasis

was being placed on private sector support and involvement (which, in one aspect, was envisioning a new role for the community college in the realm of applied research). An important element of this revitalization was the goal of enhanced partnership between the private sector and the institutions of higher education. These expectations soon translated into significant demands for change in the design and delivery of teaching programs, as well as in the research enterprise itself. Distance, part-time, and inter-disciplinary study would be part of the new partnership with higher education's constituencies. Staffing and institutional renewal and development presented major challenges in all of these areas.

Another important influence on higher education has been the country's official bilingualism. Canada's French-speaking population is concentrated in the province of Quebec, but is by no means limited to that jurisdiction. Significant francophone communities are to be found elsewhere in the country as anglophone communities are to be found in the province of Quebec. A good deal of education policy in recent years has been a quest to meet the needs of such linguistic minorities, as well, of course, as promoting the national goals of bilingualism. Because of the relatively small populations of the francophone communities outside Quebec, however, special efforts have had to be made to provide opportunities for post-secondary study in the mother tongue. Co-operative ventures between the federal government and some of the provinces, most notably Nova Scotia and Ontario, have resulted in the expansion of such opportunities at the college level. With similar co-operation, a number of institutions have been able to offer university-level work: Faculté Saint-Jean, in affiliation with the University of Alberta; Collège de Saint-Boniface, in affiliation with the University of Manitoba; Glendon College of York University, and two bilingual universities, Laurentian University and the University of Ottawa, in Ontario; Université de Moncton, in New Brunswick; and Université Sainte-Anne, in Nova Scotia. A related issue has been one of finding ways by which students' second language can be effectively utilized and developed at the college or university level.

Social policy has become even more complicated in recent years with the major influx of immigrant groups whose first language and culture are neither French nor English. In many cases these groups have wanted to see the education system making some contribution toward the preservation of their heritage, and not

simply assimilating their children into traditional Canadian society. These concerns prompted the federal government to introduce a policy of "multiculturalism," in tandem with bilingualism, and to encourage educational institutions, particularly those in the major urban centres, to develop programs that would appropriately reflect those new goals.

Another important cultural issue surrounds Canada's Aboriginal or Native peoples: the Inuit, Indian, and Métis communities. Earlier treaties with the Indian nations resulted in jurisdiction for social programs — including education — being left in the hands of the federal government. In recent years, however, there has been an increasingly strong will on the part of the Native peoples to secure self-determination and self-governance in their social and economic affairs — a development certain to have significant implications for higher education.

Related concerns about equal opportunity have also been directed toward groups not normally considered part of the social "mainstream." Significant increases have taken place in both the actual numbers of students attending institutions of higher education and in the participation rates of various age groups. At the same time, however, it is clear that additional work still needs to be done. Women have made significant gains, but not yet in all program areas or at all levels. The gains of students from the lower socio-economic strata have tended to be at the college level. Adult and part-time students are still encountering institutions primarily oriented to the young and full-time; and people with disabilities are still too often facing buildings and classrooms unable to accommodate their needs. At the same time, however, many institutions have been able to make impressive and imaginative progress in responding to these various groups. The community college in particular, with its primary commitment to teaching and student services, has been able to make a major contribution toward the overriding Canadian social principle and goal of broad and general access to higher education, and, through it, to the goods and benefits coming from full participation in Canadian society.

This identification of higher education with both social and individual benefit (and with it the notion of an entitlement to fair access) is of fairly recent vintage in Canada. The major period of growth began for the universities in the years after the Second World War, with the great boom years occupying the decade of the 1960s

and early 1970s. During the 1960s, full-time enrolment tripled, growing from approximately 100,000 to some 300,000 by 1970 (an annual growth rate of about 12%). It was during this decade as well that a major new experiment in Canadian higher education was launched: the community college. Here again the motivation was in part a realization that the universities, however quickly they were growing, offered an education relevant to only a minority of Canadians and that social justice required that an alternative opportunity be made available to the remainder of the population. It was, in part, also a realization that the country was coming to need a skilled workforce that could not be provided either by the secondary school system or by higher education as it was then constituted.

These twin and intertwined concerns — social and individual benefit — had been reflected in a seminal report of the 1950s: that of the Royal Commission on National Development in the Arts, Letters and Sciences (the so-called Massey Commission). The arguments of that report were compelling enough to persuade the federal government that it should provide a major share of the resources by which the promises of higher education could be fulfilled. So began the tradition of direct and indirect federal financing: a tradition that made possible a partnership with the provinces in fostering the major expansion of the provincial university systems and the development of the parallel systems of the community college. By the end of the 1980s, the combined population of these two systems exceeded 1.3 million students with over a third studying part-time, and elicited annual expenditures in excess of twelve billion Canadian dollars.

The changes that have taken place in public attitudes toward higher education during the years since the Second World War have produced effects broader than the incremental growth in size and number of institutions or the range and breadth of program offerings. The first movements towards government co-ordination and planning were prompted by various factors: the change in attitude to view higher education as a good to which every qualified citizen was entitled (and which a much broader range of citizens *needed*); the linking of national and regional prosperity to the "human capital" which only higher education could produce; and the enormous and seemingly insatiable growth in public expenditures. Subsequent years saw growing

disenchantment over what were viewed by many as the unfulfilled promises of higher education, and saw competing claims on the increasingly constrained public purse, principally in the areas of health care and social services. Growing demands were heard for accountability (variously defined) and governmental intervention. This was not a new experience for the community college sector; but for the universities it presented the challenge of reconciling these new forces, as well as those pressing for a closer partnership with business and industry, with the traditional needs for academic and institutional autonomy in those activities central to the university's *raison d'être*.

CHAPTER 2

HIGHER EDUCATION SYSTEMS IN CANADA

Michael Skolnik

INTRODUCTION

The purpose of this chapter is to provide an overview of basic features of Canadian higher education, to describe the division of financial and other responsibilities in higher education between the federal and provincial levels of government, and to outline the relationship between provincial governments and post-secondary education institutions.

BASIC FEATURES OF CANADIAN HIGHER EDUCATION

As a result of the provinces' jurisdiction over education, there are ten distinct provincial systems of post-secondary education — and two more in the territories. The distinctiveness of provincial systems notwithstanding, there are several noteworthy features which the diverse systems have in common.

All provinces have binary structures with a clear demarcation between the university and non-degree granting sectors. There are about 70 universities and 200 community colleges and technical institutes in Canada. The composition of the non-degree sectors varies considerably from province to province, with some having a variety of sub-sectors or specialized institutions, and others favouring a single comprehensive institutional model which is replicated throughout the province.

The non-degree sectors

In most provinces, the principal role of institutions in the non-degree sector, which includes community colleges, technical institutes, and adult training centres, is to provide occupational training and retraining, academic upgrading and basic education, and adult and community education. In three provinces, an equally important role of non-degree institutions is to serve as feeders to the

universities. In British Columbia and Alberta, the feeder role is played by junior and community colleges, similar to those in the United States, which offer courses for which transfer credit is granted by the universities. In British Columbia, arrangements have been made recently for the provision in the colleges of a complete baccalaureate curriculum in agreement with, and under supervision by, the provincial universities. In Quebec, non-degree colleges (the CEGEP, or collège d'enseignement général et professionnel) offer both a two-year pre-university general stream, which all graduates of Quebec secondary schools must complete in order to qualify for admission to a provincial university, and a three-year vocational and technical stream, which prepares graduates for employment. In these three provinces, there are formal provincial structures designed to facilitate articulation between the two sectors. Although provision of university transfer courses was not originally part of the mandate of non-degree institutions in the other provinces, increasing numbers of students there are advancing to universities subsequent to their studies in colleges, and attempts to improve articulation between sectors are under way.

In addition to the public non-degree institutions, there are many private vocational institutes in the non-degree sector, particularly for training in commerce, technology, and services, and numerous private denominational colleges, especially in Quebec and Alberta; but the vast bulk of enrolment in the non-degree sector is in public community colleges and technical institutes.

The university sectors

The university sectors are quite similar from province to province. The principal differences are in the number of universities, which varies from one each in Newfoundland and Prince Edward Island to fifteen in Ontario, and the existence in some provinces of specialized university-level institutions, such as the Technical University of Nova Scotia and Ryerson Polytechnical Institute in Ontario. Most of the universities are comprehensive institutions which offer a full range of programs, including graduate studies and professional programs, and are involved in research, though a few concentrate on undergraduate studies. Atypical university-level institutions include: the Open Learning Agency in British Columbia, which provides distance education programs at both the degree and non-degree levels, includes an open university, and operates a credit

banking system through which course work in any other provincial institution and non-formal learning are recognized; the Saskatchewan Indian Federated College, the only autonomous degree-granting institution in North America that is controlled by Aboriginal people; the Ontario Institute for Studies in Education, an autonomous graduate school/research institute specializing in studies in education; and the Université du Québec, a provincial network of constituent campuses located throughout the province, and including the Télé-université, for distance education. The Yukon and Northwest Territories each have a comprehensive, multi-campus community college but not a university. Each territory supports the costs associated with having residents attend provincial universities, and the Yukon offers first- and second-year university courses which are recognized by the University of British Columbia and a number of other universities.

Nearly all university-level institutions are public institutions, in that their incorporation derives from an act of a provincial legislature and they receive the vast bulk of their operating and capital funds from the government of their province. The only exceptions are two small private religious-affiliated institutions which offer secular degrees, one in Ontario, the other in British Columbia. Other private universities, of the type so common in the United States, have sometimes sought to operate in Canada, but provincial governments have generally been hostile to their establishment, although this issue is now under formal review in Ontario.

The emphasis in the university sector is on universal accessibility to institutions of an approximately common standard. Universities in Canada are not as a matter of public policy hierarchically differentiated. There is, of course, variation among universities in regard to status and reputation (generally between older and newer universities), but this variation is less than in many other countries and is not the result of government funding policy. Funding tends to be distributed among universities in direct relation to enrolment, taking into account differences in program mix.

The tendency towards equality in funding per student within most provinces, when considered along with the absence of government control over institutional priorities, has frequently given rise to concern over the dispersal of resources among institutions. Especially during the past decade of overall funding constraint, many

observers have urged that funding be distributed in a more discriminatory manner with one, or in larger provinces a few, institutions being designated as "flagship" universities and funded at higher levels than the others. However, in the face of a strong ethos of equality inherent in Canadian culture, and competition among different regions within each province, these calls have not been heeded.

FEDERAL-PROVINCIAL RELATIONS AND FUNDING

Total expenditures on post-secondary education in 1988-89 were $12.1 billion, which represented 2.0% of Gross Domestic Product (Secretary of State, 1990, p. 38). While the primary responsibility for education in Canada rests with the provinces, the federal government has long played a major role in the development of post-secondary education. Some of the earliest universities were chartered by the federal government (since superseded by provincial charters); the initial stimulus for the development of agricultural and technical education came from the federal government; and the post-World War II expansion of the universities was initially facilitated by direct grants from the federal government to the universities. These direct grants were later replaced by a cost-sharing arrangement under which the federal government reimbursed the provinces for 50 per cent of the cost of post-secondary education.

As is typically the case in federal systems, the appropriate division of responsibility and authority between the two levels of government in Canada is a subject of passionate difference of opinion. During the past two decades, provincial governments have pressed for greater decentralization in all realms of public administration, and the federal government has generally acceded to these demands. As a result, the direct role of the federal government in post-secondary education diminished, not so much for reasons having to do specifically with post-secondary education, but as part of a larger realignment of the Canadian Confederation. Owing, however, to its historic role in financial support of post-secondary education and to its substantial revenue-generating capacity, the federal government retains a major responsibility for the financing of post-secondary education, even if its massive contributions for this enterprise are invisible to most Canadians. Although it is left with

quite limited capacity for direct influence on the development of post-secondary education, the federal government exerts a significant indirect influence; for example, through provision of research funding, through massive purchases of places in community colleges for adult retraining and other labour market adjustment initiatives, and through contributions under the Official Languages in Education Program. Under this program, the Government of Canada provides financial assistance to the provinces and territories in support of the additional costs they incur in the maintenance and development of minority official-language education and second official-language instruction at the primary, secondary, and post-secondary levels (Secretary of State, 1990, p. 65).

Under legislation enacted by the Parliament of Canada in 1977, the federal government provides an unconditional transfer of funds to the provinces for post-secondary education and health. These funds, which come through arrangements known as Established Programs Financing (EPF), go into general provincial revenue and may be used by the provinces as they wish. Because the grants are not tied to post-secondary education, it is impossible to produce definitive estimates of the federal contributions for post-secondary education. Based, however, on certain assumptions about the distribution of expenditures between post-secondary education and health at the time the EPF replaced the earlier cost-share arrangements, estimates have been made of the imputed value of federal government contributions to the provinces for post-secondary education (e.g., Johnson, 1985, pp. 10-12). These estimates, which show that the majority of funding for post-secondary education is being provided by the federal government and that half the provinces are spending less on post-secondary education than they receive in transfers from the federal government, are, in turn, regularly contested by provincial governments.

Provincial grants to universities account for about 80 per cent of their operating revenue, and about 90 per cent for colleges (though the precise figures vary somewhat by province), with most of the remainder coming from tuition fees, and a small, but increasingly important amount from donations and fund-raising efforts. Provincial and territorial government expenditures for post-secondary education in 1988-89 were $5.6 billion for universities and $3 billion for community colleges and technical institutes. In recent

years, the federal government has put caps on the rate of increase in its transfers to the provinces under the EPF (which were initially to be indexed to the rate of growth of Gross National Product), and the provinces have implemented their own fiscal restraints on post-secondary funding. The effect of these restraints has been that real operating grants per student have been declining since 1977-78 (CAUT, 1987, p. 14), and the perceived inadequacy of funding in relation to pressure to increase accessibility and maintain quality has been the dominant issue in the minds of post-secondary educators for many years.

Two other aspects of post-secondary funding which should be noted are those pertaining to research and student aid. While provincial governments provide the institutional infrastructure for post-secondary education and some direct funding for research, the vast bulk of direct funding for university research is provided by the federal government through its three national granting councils (the Natural Sciences and Engineering Research Council, NSERC; the Social Sciences and Humanities Research Council, SSHRC; and the Medical Research Council, MRC). All provinces operate extensive student grant and loan programs, and these are supplemented by the Canada Student Loan Program of the federal government.

While the Department of the Secretary of State of Canada co-ordinates most federal government activities in post-secondary education, Canada has no national department or office of education comparable to those of nearly all other unitary or federated nations.

Limited inter-provincial co-ordination takes place through the Council of [provincial] Ministers of Education, Canada (CMEC). For example, in 1985, the Council of Ministers issued two policy statements, one identifying new challenges for post-secondary education and manpower training in Canada and suggesting some general principles for addressing these challenges (CMEC, 1985a), and the other enunciating principles for interaction between the two orders of government (CMEC, 1985b). In 1987, the Council of Ministers and the Department of the Secretary of State of Canada co-sponsored a National Forum on Post-Secondary Education, which brought educators and officials of both orders of government together with other interested parties for two days to discuss major issues in post-secondary education (see Segal, 1987). More recently, there has been an agreement between the two orders of government to establish a National Task Force on Human Resource Development.

Useful as some of these initiatives might turn out to be, there is a perception within the higher education community that some type of national agency or permanent forum is needed to address pressing national issues in post-secondary education. Given the current constitutional imbroglio in Canada, however, the outlook for movement towards the establishment of a permanent national forum for post-secondary education is not clear.

PROVINCIAL GOVERNMENT RELATIONS AND GOVERNANCE

With the establishment and regulation of post-secondary institutions being the exclusive prerogative of the provinces, most provinces have legislation which restricts the awarding of degrees and the use of the term "university" to those institutions which have been established by an act of the provincial legislature.

While in principle universities are under the jurisdiction of a provincial ministry, in practice they operate as autonomous institutions and enjoy almost total freedom in all realms of academic activity. The only respects in which government limits their autonomy are financial: requirements that degree programs must be approved by government in order to be eligible for funding; government influence over and, in several provinces, direct control of the tuition fees that universities can charge students; increased use of targeted funding for particular activities and programs (though the vast bulk of provincial funding is in the form of unconditional grants); and regulations pertaining to financial administration, auditing, and reporting. Otherwise, Canadian universities probably have greater autonomy than public universities anywhere else in the world.

Government supervision of universities, to the extent that it is exercised, is normally the responsibility of the department which has the major responsibility for universities, (e.g., a Ministry of Education or of Advanced Education). In six provinces, there are intermediary bodies which advise provincial governments on institutional funding levels, approval of new programs, and other matters pertaining to the development of the university systems. Manitoba, Ontario, and Quebec each have such an intermediary body; and there is a single body, the Maritime Provinces Higher Education Commission, which

is charged with overseeing the development of higher education and making recommendations to the governments of each of the three Maritime Provinces — Nova Scotia, New Brunswick, and Prince Edward Island. In the other provinces, there are less formal arrangements for reconciling government and institutional interests in the ongoing development of the university systems.

Governance arrangements within the universities are quite similar from one province to another. All except three universities have bicameral structures in which responsibility is divided between a supervisory board comprised of government appointees (which are usually in the majority), selected faculty members, students, and representatives of other constituencies, and an Academic Senate comprised of faculty members (usually in the majority), students, administrators, and others. The other three universities (Laval, Toronto, and Athabasca universities) have a unicameral structure in which the functions of the Board and Academic Senate are combined in one governing body. The Board is usually assigned plenary authority under the university's charter. Responsible to the Senate are the councils of the Faculties and Schools, and below them, the Departments. Administrative responsibility moves upward from the Department Heads, through Deans and Directors of the Faculties and Schools, to the President (or Principal) and Vice-Chancellor. Academic administrators are appointed by the board, normally on the recommendation of the search committee, for a specified term of office.

In contrast to the university sectors, the non-degree sectors are closely regulated by provincial governments. The extent of provincial government direction over such matters as admissions policy, curriculum, working conditions, and institutional planning varies among provinces, as do the arrangements for governance of the colleges. In the majority of provinces, each college has a local governing board whose membership consists of representatives of the community who are appointed by the government, augmented in most cases by a minority of faculty members and students selected from within the college. These boards operate under close scrutiny of provincial governments and have substantially less authority than do university boards. In the other provinces, the colleges are administered directly by the relevant provincial government ministry, with input from a community advisory council. Though, in some provinces, colleges have internal academic councils, as a rule colleges

do not have internal bodies with the stature or authority of the universities' Academic Senates. Thus, administrative officers in the colleges exercise greater authority over institutional decision-making than do their counterparts in the universities. The colleges make extensive use of program advisory committees drawn from employers and practitioners in the various career fields who advise on curriculum and program requirements, but final authority over curriculum and academic policy rests with college management and the respective government ministries. Over the years, the balance between local discretion of college management and centralist direction by the government has varied, but the balance is now clearly in the direction of greater control by government in all provinces (Gallagher, 1987, p. 12).

CONCLUSION

Canada has an almost exclusively public system of higher education which emphasizes both providing a wide range of opportunities to its diverse and geographically dispersed population and serving as an intellectual and research base for the technological and professional knowledge and skill requirements of its growing economy. In its breadth and quality, Canadian higher education is well poised to meet challenges of an increasingly multicultural society that is committed to further redressing social inequity, and of an increasingly competitive world economy.

However, the rapid expansion of the past two decades and the financial austerity of the past decade have imposed strains which will warrant attention during the remainder of this century. Among the weak spots which may be in need of attention are: the continued underrepresentation of Native peoples, francophones outside Quebec, persons with disabilities, women in some fields, and certain other minorities in higher education; the inferior opportunities afforded to part-time students and the fact that lifelong learning has yet to become a reality; the historic tendencies towards dispersal of resources for research and advanced study; weaknesses in liberal and general education; the absence, in most provinces, of effective co-ordination and linkages between colleges and universities; and the lack of adequate mechanisms for co-ordination between federal and provincial policies and funding for higher education. Yet, working

from the base of achievements of the past 20 years, and drawing upon the high quality intellectual and organizational infrastructure which presently exists, there are good grounds for optimism that these challenges can be addressed effectively.

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HIGHER EDUCATION ORGANIZATIONS

Donald C. Savage

As a consequence of the pronounced decentralization that has characterized Canada's political and educational systems, the Canadian higher education community was slow to develop institutions to permit co-ordination at the national level and the sharing of a common view.

Nevertheless, there was a clear impulse for some forms of academic co-operation from a quite early date. These fall into two distinct categories — the organization of the academic disciplines, and the organization of the academic community.

The disciplines came first. The Royal Society of Canada was formed in 1882 for the promotion of literature and science in Canada. It was modelled on the Royal Society in the United Kingdom and was open to non-academics. Members were chosen by the fellows of the Society. At the time of its foundation, there were few learned societies in Canada and few outlets for scholarly and scientific publication of an academic nature. The Society endeavoured to be the patron of the humanities and the natural sciences. To this end it published its *Transactions* and *Proceedings* which were to provide a forum for discourse on literature and science. Over the years the Society has been a lobbyist for the creation and development of institutions necessary for the development of scholarly work in Canada. These include institutions such as the National Museums, the Public Archives (now National Archives), the Historic Sites and Monuments Board, the National Gallery, the National Library and the Dominion Astrophysical Observatory.

Initially, the Society hoped that its annual meeting would become the venue for scholarly debate and reporting in all disciplines. But gradually this was transformed into a process by which individual learned societies were spun off or encouraged to grow. For instance, in 1907 the Society formed the Historic Landmarks Association of Canada which became, in 1922, the Canadian Historical Association. The number of such academic

associations grew slowly until after the Second World War when there was a positive explosion in the formation of such groups. This reflected the dramatically increased focus on research of Canadian universities from the 1960s onwards. Over the years, the Royal Society had less and less to do with the formation of organizations to represent particular disciplines. The individual learned societies became the focus for most academics since they, unlike the Royal Society, were open to all practitioners who paid the fees. Their journals became the centres for academic discourse and they organized their own agendas at the annual meeting of the learned societies, that special Canadian academic rite which had been created by the Royal Society.

During the Second World War, the Royal Society also encouraged the creation of two new federations to represent academics in the human sciences in a more coherent and effective form. These were the Social Science Federation of Canada (previously the Social Science Research Council of Canada) which was created in 1940, and the Canadian Federation for the Humanities (formerly the Humanities Research Council) which was born in 1943. The latter was created to meet a dramatic crisis when principals Cyril James of McGill University and R.C. Wallace of Queen's University proposed that, as part of the war effort, Canadian universities should eliminate all courses in commerce, law, arts, and education. Academic lobbying persuaded the government not to proceed with this suggestion. This was one of the many ways in which the war was a catalyst for the development of national university institutions.

In the sciences, the National Research Council (NRC), founded by the federal government during the First World War, played a seminal role in the support of university science. In particular, the research grants of the NRC ensured that university scientists could participate in international scholarships in their fields. In the 1970s, the NRC was replaced in this capacity by the Natural Sciences and Engineering Research Council (NSERC) and by the Medical Research Council (MRC). They were joined by the Social Sciences and Humanities Research Council. These three bodies became the vehicles through which the federal government supported university research.

Furthermore, there was a rapid growth of disciplinary organizations in the 1960s and 1970s. For example, in the area of

biology, the Biological Council of Canada and the Canadian Federation of Biological Societies played an ever more active role in representing their members. One reason for this was the need for more overt political lobbying which could not be undertaken by governmental bodies such as the MRC and NSERC.

From the sixties onwards, the federations and the larger societies became lobbyists for their members, particularly in relation to the funding of research. The proliferation of learned societies meant, however, that it was difficult to maximize and to co-ordinate academic lobbying. To this end, a number of academic societies and federations created, in the late seventies, the National Consortium of Educational and Scientific Society. The Consortium was a loose gathering of, eventually, 35 associations which attempted to co-ordinate lobbying. One of its major projects became an annual week of lobbying on Parliament Hill. Meanwhile, the Royal Society restructured itself with a new corporate plan and involved itself in a number of new projects and studies on various scientific matters, public awareness of science, and the role of women in science and engineering. The purpose is to create an informed public and to provide sound advice to government.

The lively growth of disciplinary associations in Canada provides an important part of the structural basis for the growth of the Canadian academic research enterprise. It also creates one of the enduring tensions within the university, namely, the sometimes conflicting pull of disciplinary and university loyalties. Other problems have been more specific to Canada. The competition of American professional societies has been very strong, and this raises the question of whether the Canadian ones can achieve and hold equal academic distinction. The conservative character of the professional societies has meant that women have for many years found it difficult to have their concerns taken seriously. Similar concerns led to the creation of separate francophone associations in many disciplines and an increased focus on the activities of the Association canadienne-française pour l'avancement des sciences (ACFAS).

The university community also organized to further its interests as universities as well as in particular disciplines. The Association of Universities and Colleges of Canada (AUCC) was the pioneer in this area. It came into being in 1911 and has continued its existence with various constitutions and through four name changes

(Conference of Canadian Universities, 1911-17; National Conference of Canadian Universities (NCCU), 1917-58; National Conference of Canadian Universities and Colleges (NCCUC), 1959-65; AUCC, 1965 to the present day). It was called into existence by the university presidents, and it has remained their institutional voice. Until the Second World War, it was essentially an annual conference of executive heads convened to discuss common problems such as entrance requirements and the development of graduate programs. It did not have a permanent secretariat, and it did not in any way challenge the powers of individual presidents. It also considered itself the voice of the entire university community, whether administrators, faculty or students.

It was the Second World War, and the subsequent question of costs, which would lead to the peak of the power and influence of the universities and of the NCCU at the national level, despite the view of its president in 1946, who thought it should revert immediately to its pre-war status. It is not surprising that this growth should exactly parallel the enormous increase in the powers and responsibilities of the federal government in the 1940s and 1950s, which arose from the war, reconstruction after it, and the advent of the Cold War. Nor is it surprising that this growth persuaded many university presidents that the NCCU (and its successor NCCUC) should become the parliament of the academic profession. There was a considerable postwar growth of its substructure with the creation of national groups to represent business officers, graduate deans, deans of various faculties, research officers, and the like. The organization, over the years, took on a variety of tasks: accrediting foreign degrees (a function it no longer performs), administering international and national scholarships, developing policy regarding animal welfare in research laboratories, administering contracts with foreign governments for the placement of international students in Canadian universities, and the like. Recently the AUCC commissioned a report by Dr. Stuart Smith on the educational mission of the universities, particularly at the undergraduate level. Publication of a national journal, *University Affairs*, began in 1959.

But that parliament was not to be. There were two main reasons for this. After the Second World War, faculty, and particularly returning veterans on the faculty, were not prepared to accept the old structures of the university. In 1951, they formed their own organization, the Canadian Association of University Teachers

(CAUT), which sought influence as an independent voice of the university teaching profession both at the local and the national level. Initially, it saw itself as a professional corporation along the lines of the doctors' and lawyers' associations, and challenged university administrators to share power with the faculty. In particular, it wished to transform the government of universities so that the voice of the faculty would predominate. The leaders of the CAUT wanted to turn senates and general faculty councils in the direction of faculty democracy. They also wanted to elect heads of departments and to require all administrators to serve for fixed terms. This approach was articulated in *A Place of Liberty* (Whalley, 1964) and in the Duff-Berdahl Commission (1966), appointed jointly by the AUCC and CAUT to study university governance.

The rapid expansion in the size of universities had already undermined older paternalism as a style of management, except in the smallest institutions. Now there would be two competing views of how to run the university: self-governing structures versus bureaucratic ones. The result generally was an uneasy mixture of both. Universities did restructure themselves not only by greatly expanding their bureaucratic structures, but also by reforming their senates, faculty councils, and the like, through the incorporation of the principle of elections. What Duff-Berdahl forgot were the students. Election would inevitably mean not only faculty, but also student representatives. The institutions of the university were thus considerably modified.

They were also changed by another activity of the CAUT. This was the creation of policy statements in all the key areas of faculty concern within the university (academic freedom, tenure, dismissal, professional ethics, patents and copyright, equality rights, etc.), which local associations then negotiated with their presidents and boards of governors. A national publication, *The CAUT Bulletin*, began in the late 1950s.

In the late 1960s and 1970s, the CAUT turned to collective bargaining to achieve its ends of shared power. The collective agreement would become the vehicle for securing, at the local level, the rights already articulated by the CAUT, and for negotiating better economic conditions. Collective bargaining did produce a real sharing of power in those areas of the university touched by the bargaining process. But it did not deal with other areas of governance, particularly decisions about strictly academic matters.

Nevertheless, discussion about university governance declined during the next two decades and is only now beginning to re-emerge. One sign of this was the recent decision of the CAUT to appoint a commission on university governance.

The democratic ideology of the sixties dramatically increased the visibility of student issues, but simultaneously destroyed most national student organizations. The National Federation of Canadian University Students (NFCUS) transformed itself into the Canadian Union of Students (CUS) in 1963 and, for five years, along with its parallel organization in Quebec, the Union générale des étudiants du Québec (UGEQ), participated in the stormy debates of the decade over the Vietnam war, Quebec nationalism, poverty and socialism, and the place of students in a democratic university. It also decided, unlike the AUCC and the CAUT, to represent students in the new wave of community colleges which were being created across the country. However, as the logic of the student left gradually turned against any form of structural organization including its own, both the CUS and the UGEQ collapsed. Nevertheless, the need for some form of national structure remained, particularly given the growing problems of federal/provincial financing and of student aid. During the seventies, students in anglophone Canada created two bodies — one to lobby and represent the general interest of students (the National Union of Students), and the other (the Association of Student Councils) to provide services such as its travel agency and its program for students who wish to work abroad. At the beginning of the eighties, these two merged to form the Canadian Federation of Students (CFS) which is the national body for students outside Quebec. There were parallel developments in Quebec, but no single student organization emerged to represent all university and CEGEP students.

Neither the AUCC nor the CAUT were prepared to deal with the rapid growth of community colleges in the sixties and seventies. In 1973, the CAUT authorized an approach to community college faculties, but failed to do anything about it. The consequence of the position of the AUCC and the CAUT was the creation at the national level of the Association of Canadian Community Colleges (ACCC). There also came into existence a variety of provincial organizations which mainly represented the boards or administrators of the colleges. The faculty either formed provincial associations of local unions as in British Columbia and Alberta, or joined provincial civil

service unions as in Ontario and Manitoba. In Quebec, they split among various unions or remained independent of all of them. No national organization came into existence largely because, until recently, community college teachers have considered their provincial governments to be the sole locus of power. In 1991, CAUT promoted the creation of a formal coalition of unions representing employees at all levels in colleges and universities to promote co-ordinated federal lobbying.

With the advent of the 1980s, all of the national organizations had to adjust to new realities. In the early years of the decade, the AUCC accepted the logic of this changed world and reconstructed itself so that it was clearly the voice of the university presidents and the university administrations. Local groupings of administrators had come into existence in their own provinces or regions — the Conférence des recteurs et des principaux des universités du Québec (CREPUQ) in Quebec, the Council of Ontario Universities (COU) in Ontario, the Council of Western Canadian University Presidents (COWCUP) in the West, and the Association of Atlantic Universities (AAU) in the East. They played a significant role in the new structure of the AUCC but not to the exclusion of individual universities. During the seventies, the CAUT lost its Quebec affiliate, the Fédération des associations de professeurs des universités du Québec (FAPUQ), then practised sovereignty-association with FAPUQ for a number of years, and finally amended its constitution to ensure a veto, in regard to minority rights, in the area of language and the French culture. It, too, saw the growth of provincial federations across the country which became a part of the organization's structure. Like the AUCC, the CAUT retained its local members who continued to hold preponderant power in the organization. The Canadian Federation of Students too has had a long and difficult debate about the role of provincial student federations within its structure.

CONCLUSION

Institutionally Canadian universities and colleges have transformed themselves since 1945. They have expanded enormously in student and faculty numbers as well as in the number and variety of institutions. They have seen the arrival of new bureaucratic structures

and of the widespread use of the elective principle. They have seen the rise of powerful local faculty and student associations, as well as provincial and national bodies of teachers and students. In addition, Canadian universities and colleges have over the years created an astonishing variety of university institutions to represent themselves and to coordinate their activities where this seemed possible and reasonable. Canadian federalism contributes to the proliferation of such associations and societies. There are, of course, complaints that there is no end to the making of higher education organizations, and that the number and variety of them prevent the Canadian academic community from being heard as one voice. However, this diversity is also a function of a thriving democracy and of a commitment to seek the ways and means of making things work in the university context. Nor is it impossible for different interests to cooperate, particularly in the political sphere, when the events make this necessary. Such coalitions are not easy to make or to maintain, but they are, perhaps, for that reason more effective.

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THE STAFF OF POST-SECONDARY INSTITUTIONS

Sheryl L. Bond and Gilles G. Nadeau

INTRODUCTION

Over the last ten years, a diverse pool of talent, the full-time teaching staff of the colleges and universities of Canada has been challenged to respond to fundamental social and economic changes within the contemporary national context.

CURRENT CIRCUMSTANCES

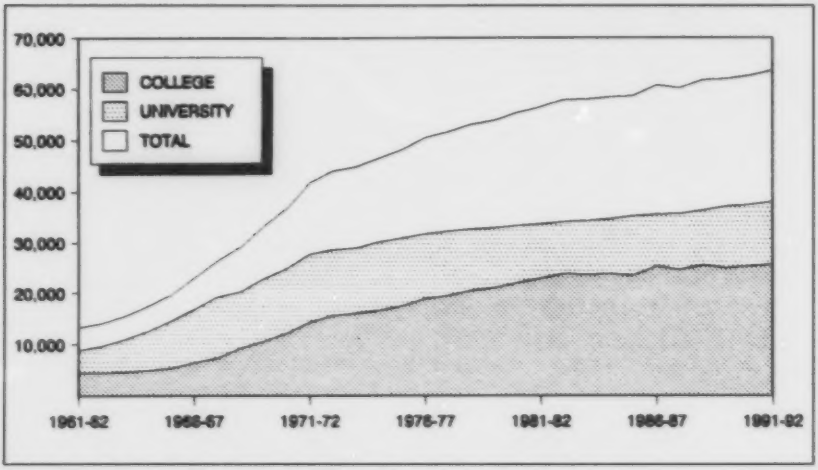
Primarily driven by significant increases in the participation rates of females, overall enrolment in post-secondary education has continued to increase; in addition, a larger percentage of entering students already possess degrees and the number of students pursuing part-time studies has increased.

During this period of rising social expectations and corresponding increases in student enrolment, support for universities has fluctuated and expressions of public concern over perceived under-funding have continued. In part as a result of prolonged and continuing budgetary restraint, the number of full-time university academic staff has increased modestly since the late 1970s (12.4% between 1980 and 1990). The impact on university staff of changing social needs, coupled with economic restraint, has been predictable. Their institutions expect them to do more and better, and with fewer resources.

Designed to be responsive to the changing needs of the communities and constituencies which they serve, Canadian community colleges have also experienced significant increases in numbers and types of educational programs, and a doubling of enrolments. Until recently, colleges have managed to maintain a constant level of public support, and the number of staff of these diverse institutions has risen to over 24,000 full-time faculty members

Figure 4.1

Number of Full-Time Post-Secondary Teachers, Canada, 1961-62 to 1991-92



Source: *Secretary of State (1991), figure 2.2, page 9.*
Statistics Canada (1991b), table 3, page 20.

and an estimated 150,000 part-time instructional staff (Gallagher, 1990, p. 4). The nature of college programs and student profiles contribute to the high percentage of part-time teachers in the college system. The waves of growth and the escalating costs associated with sustaining a complex college system have recently given way to reassessments of institutional mandates and to various forms of increased governmental control.

Figure 4.1 shows that the overall number of full-time post-secondary teachers has increased significantly over the last thirty years. However, the growth experienced since the late sixties was driven primarily by the significant number of appointments to the colleges sector. Changes in funding, participation rates, and involvement patterns of the staff of post-secondary institutions should not be understood to be uniform across the system. The work of universities and that of colleges have been affected in quite different ways.

Particularly during times of change, the terms and conditions of employment of post-secondary staff become a central focus for faculty associations and staff unions. Sixty-five out of seventy-three universities are now affiliated with either the Canadian Association of University Teachers or the Fédération québécoise des professeures

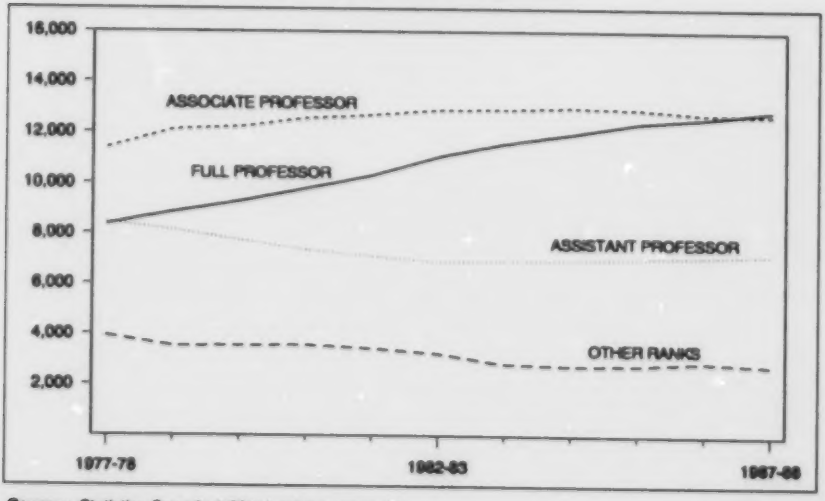
et professeurs d'université and engage in collective bargaining. The majority of college staff are also represented by a range of unions.

PROFILE OF FULL-TIME UNIVERSITY STAFF

The limited hiring which has taken place in the academy has caused significant shifts in the assistant, associate, and full professor ranks held by the faculty (cf. Figure 4.2 below). While the number of people in the lower academic ranks has continued to decrease over the last ten years, the number of full professors has increased 53 % over the same period. Most of this change can be attributed to the normal progression of the professoriate through the ranks and the lack of infusion of "new blood" into the academy.

With the traditional avenues of entry to the professoriate increasingly restricted, responsibility for maintaining the vitality of the university over an extended period of time has fallen to the continuing full-time academic staff. The concern over institutional vitality has led to the emergence of a range of new and innovative faculty renewal policies and programs.

Full-Time Faculty by Rank, Canada, 1977-78 to 1987-88



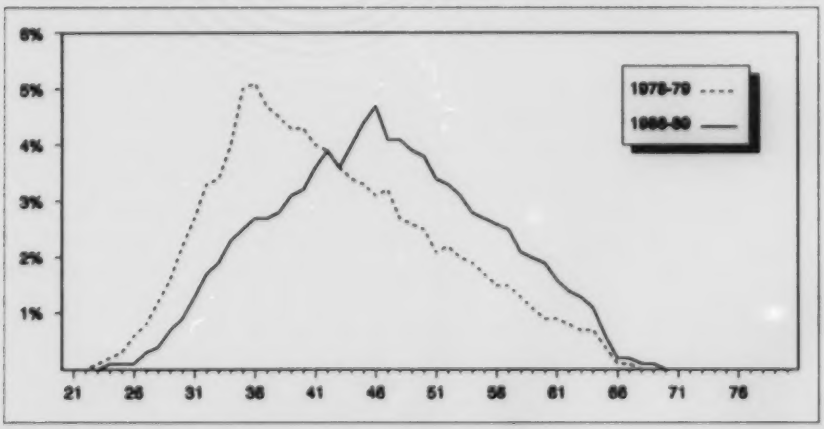
Source: Statistics Canada (1991a), table 1, page 17.

As the professoriate matures in its professional work, it is also aging. A comparison of the age distribution of full-time faculty over time illustrates this phenomenon. As can be seen in Figure 4.3, the distribution of faculty across major age cohorts is skewed. For the most part this is a result of the large number of appointments to full-time positions made by universities during the expansionist period of the 1960s. This unusually large cohort of faculty who are now in the mid-forty age range has gained tenure and has normally earned at least one promotion.

It has been argued that the aging of the professoriate may affect the quality of the university. Low levels of attrition and lack of new appointments have raised serious concerns about the capability of higher education to maintain its role as the major contributor to and transmitter of emerging areas of knowledge and technology. With an aging, tenured faculty, clustered into the senior ranks, institutional planning has become more difficult, the costs of instruction have increased, and the flexibility in the system to absorb recent Ph.D. graduates has decreased.

Hiring is carried out at the university and college level by a selection process which takes place after the available positions have been advertised publicly.

Age Distribution of Full-Time Faculty, Canada, 1978-79 and 1988-89



Source: *AUCC, Trends, the Canadian University in Profile, 1990 Edition, updated data for figure on page 75.*

One of the conditions of employment at the university level is normally the Ph.D. or equivalent. Few institutions require their professors to have any pedagogical training. Larger universities have an Instructional Development Office which offers help to the teaching staff on a voluntary basis. However, over the past ten years, these services have usually suffered from budgetary and financial cutbacks.

Salary structures are more or less the same in all universities. However, due to difficulties in recruiting personnel, variations can exist within different fields in the same institution and from one institution to another, depending on the supply and demand.

At the university level, the allotment of duties related to teaching, research and service to the community varies considerably from one institution to another across the country. The normal load of a regular professor is from 12 to 15 hours of teaching per week.

PROFILE OF COLLEGE STAFF

A noticeable characteristic of the community college teaching body derives from the high percentage of part-time instructors. These individuals bring a particular vocational currency, but often not a great deal of pedagogical sophistication, to their teaching. College teaching personnel have traditionally been drawn from several sources: the industries for which students are trained; the universities; secondary schools; government; the military; and the health and social service agencies. Because so many college instructors, particularly those not teaching in university transfer programs, begin with little teaching expertise, in-service training for them is common across the country. Rank and promotion for full-time instructors are not major issues in community colleges; generally there are no ranks, and security of employment is ensured after a few years of successful performance.

Another notable characteristic of the college teaching force is the much higher percentage of women in both teaching and administrative positions than is the case in the universities. The cultural diversity of college student populations is, however, not yet reflected in the composition of college instructional staff.

Since the early 1980s, there has been a sharp decline in the mobility of full-time college instructors. As a result, issues related to the aging of faculty, the need for renewal, and mandatory retirement have been preoccupations of colleges in recent years. As in the case of universities, the problem of continuing professional development of staff is receiving increasing attention.

PART-TIME STAFF

Over the past ten years, an increasing number of part-time lecturers have been hired across the country both in universities (particularly in professional programs) and in community colleges. The lack of permanency and the essentially ad hoc involvement of this type of teaching staff have resulted in an increase in the teaching load and the responsibilities of the full-time staff. Given the need to establish an equilibrium between part-time teaching positions and regular full-time positions, the matter will certainly be on the agenda in the near future.

OPPORTUNITIES FOR CHANGE

Although there is no sign that the financial constraints will ease in the 1990s, the constriction in hiring will begin to come to an end by the beginning of the next century, when universities can reasonably expect a significant number of retirements to occur. Although the timing and degree of hiring will vary by discipline, it is anticipated that Canadian universities will be both recruiting newly trained Ph.D.'s, and seeking to relocate into the academy at least some of those graduates who had joined the private and nonprofit sectors during the 1990s.

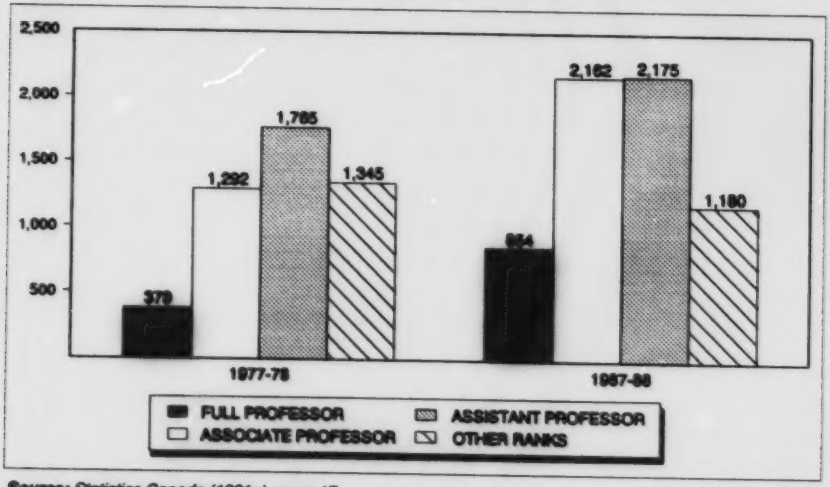
Many universities see this upcoming period as an opportunity to make significant changes in the institutional mission and to bring about a more equitable representation of women on the academic staff.

Despite the fact that women account for over fifty per cent of all students in post-secondary education, female faculty remain a "distinct minority" in the academy. Although the number of women in the faculty ranks has risen 33%, this figure masks the reality that

there has been an increase from only 14.9% to 17.9% in the proportion of female faculty in the last ten years.

The level of qualification of both male and female faculty has increased in all fields of study. About 70% of male faculty and approximately 51% of female faculty currently hold doctoral degrees. To the extent that the doctorate has become a condition of employment, this lower level of entry qualification of some women constitutes a major obstacle to advancement through the professorial ranks. The increasing number of women in doctoral studies in Canadian institutions, however, holds promise of addressing this problem in the long term. Major policy initiatives and special recruitment practices are currently being considered or implemented to address the imbalance in the short term and to facilitate the increase in the numbers and roles of women in higher education in Canada.

Full-Time Female Faculty by Rank, Canada, 1977-78 and 1987-88



Source: Statistics Canada (1991a), page 17.

CONCLUSION

The last decade has been characterized by changes in the academic activities of university and college staff. The large increase in numbers of students in both colleges and universities has come at a time when the numbers of full-time staff of most institutions have remained the same or become somewhat smaller. The decline in governmental support relative to inflation and escalating costs, coupled with the limited attrition which has occurred in the system as a result of retirements and the early leaving of younger academics for lucrative positions in other employment sectors, have forced post-secondary institutions to adopt new strategies for maintaining excellence. The challenge of the 1990s is to secure new Ph.D.'s and maintain their commitment, to increase the number of women on staff and in leadership roles, and to design institutional strategies which will enhance the continuing productivity of all staff and enable educational institutions to remain responsive to innovation and change.

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STUDENTS

Norman Uhl and Anne Marie MacKinnon

INTRODUCTION

This chapter describes the student population in Canadian colleges and universities. It includes comment on enrolment trends, accessibility, financial assistance, international students, and student government and services.

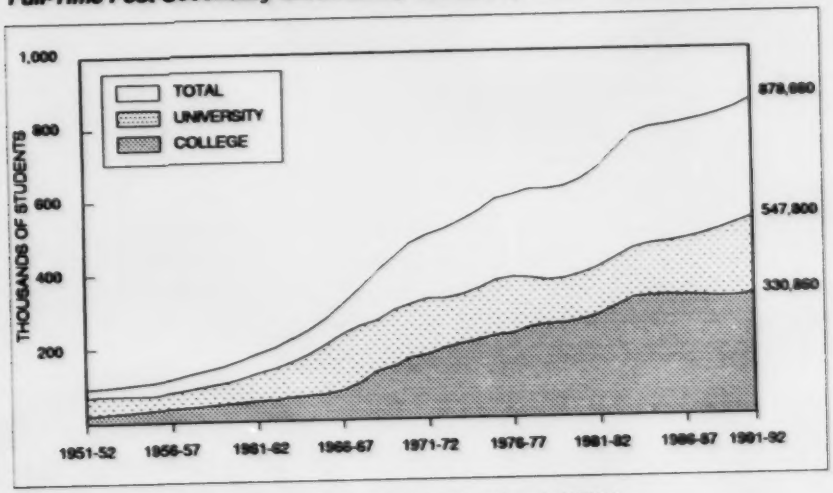
ENROLMENTS

The profile of the Canadian post-secondary student population at the beginning of the 1990s was very different from that of any other period. Since the early 1950s, numbers have increased dramatically, to the extent that in 1990-91 there were 857,000 full-time students in post-secondary institutions — or almost nine times the number in 1951-52, which was 91,000.

During the late 1960s and early 1970s, full-time enrolments increased rapidly as the exceptionally large number of babies born in the late 1940s and 1950s, the so-called "baby boomers," became of age and entered college and university. While the rate of growth slowed somewhat in the late 1970s, enrolments again soared in the early 1980s and continued to climb, though at a slower pace, throughout the latter part of the 1980s (see Figure 5.1). The enrolment increase in these years was not at all anticipated and was caused by a combination of economic and social influences: a serious economic recession, the increased educational requirements of a highly technological world, an ever-growing recognition of the role of women in all aspects of society, and a dramatic increase in the number and diversity of new institutions in the 1960s and the 1970s.

Besides the growing numbers, other noticeable trends were affecting the post-secondary student population during the 1980s. Participation rates increased considerably, in part for the reasons indicated above, and in part as a reflection of the desire of many

Full-Time Post-Secondary Enrolments, Canada, by Level 1951-52 to 1991-92



Source: Secretary of State (1991), figure 1.1, page 1. Statistics Canada (1991a), table 2 page 19.

people outside the traditional 18-24 age group to follow college or university courses. In 1990, students 25 years of age and older constituted 24% of all full-time university enrolments compared to 18% in 1975. Their numbers grew from about 70,000 in 1975 to nearly 130,000 in 1990. In 1976, older students constituted 12% of full-time college enrolments compared to 16% in 1988, their numbers increasing from 11,000 to 50,000. As a result, these older students are becoming very much a part of the university and college scenes.

The distribution of full-time and part-time students was changing as part-time students increased by a greater percentage than their full-time counterparts. At the university level, there were 532,000 full-time students in 1990-91, representing a 72% increase since 1970-71. During this same period, part-time students increased by 98%. Part-time students now constitute 37% of all university students. In one province, Quebec, there have been more part-time students than full-time students for several years.

In the college sector, full-time enrolments remained fairly stable over the 1984-85 to 1989-90 period, whereas part-time students rose by 19%. In 1989-90, 63% of college students were studying full-time, and 37% on a part-time basis.

Patterns of enrolment change over the past two decades are also quite different for each major field of study. According to *Universities: Enrolment and Degrees 1988* (Statistics Canada, 1990c), the social sciences made the highest gains in full-time enrolment (from 57,500 in 1970 to 162,000 in 1989-90) followed by fine and applied arts (from 5,500 in 1970-71 to 16,500 in 1989-90). Large growth in part-time enrolment occurred in the health professions, fine arts, mathematics, and physical sciences. At the college level, the highest gain was in business and commerce followed by significant growth in engineering and applied sciences, social sciences, and social services.

ACCESSIBILITY

Progress made in increasing overall participation at the post-secondary level has not resulted in a corresponding increase in the level of participation of members of certain groups within society. At various times and in various regions of the country, there have been concerns regarding the participation patterns of such groups as women, Native peoples, and persons with disabilities.

Women

The most significant development in post-secondary education in recent decades, and the one which has most influenced enrolments has been the phenomenal increase of women students at all levels of post-secondary education. The number of women enroled full-time at universities increased by 79% between 1975 and 1990 while the number of men grew by 19%. During the same period, full-time college enrolments also increased at a faster rate for women than for men (55% compared to 32%). Women now constitute at least 50% of full-time students in both colleges and universities and 54% of all part-time university students. Table 5.1 shows clearly the significant growth of women among full-time post-secondary students at all levels. In 1990-91, women constituted 55% of students at the college level, 53% of full-time undergraduates in universities, 45% of full-time students at the master's level, and 34% of full-time doctoral students.

In each of the major fields of study, female enrolment has grown at a faster rate than that of males. By 1989-90, women made up more than half of total enrolment in seven of the nine major fields

Distribution of Full-Time Post-Secondary Students, by Sex and Level, and Proportion of Female Students at Each Level, Canada, 1975 to 1990

	NUMBER OF FULL-TIME STUDENTS			
	College Level*	Under-graduates	Master's	Doctorate
FEMALES				
1975	114,011	139,987	7,385	2,215
1980	133,008	155,554	10,292	2,975
1985	165,654	201,623	13,857	4,476
1990	176,380	244,946	16,133	6,322
MALES				
1975	112,150	188,837	16,158	7,055
1980	127,753	182,398	15,510	6,972
1985	156,558	210,794	18,087	9,025
1990	148,170	220,146	19,527	12,041

	PROPORTION OF FEMALE STUDENTS			
	College Level*	Under-graduates	Master's	Doctorate
	%	%	%	%
1975	50.4	42.6	31.4	23.9
1980	51.0	46.0	39.9	29.9
1985	51.4	48.9	43.4	33.2
1990	54.3	52.7	45.2	34.4

** College enrolment data not available by sex for 1975. Data are that of 1976.*

Source: *Statistics Canada, Special tabulations produced for the Department of the Secretary of State of Canada, Profile of Higher Education in Canada, 1990 edition, table 1.07. .*

of study and accounted for more than 60% of total full-time enrolment in education, fine and applied arts, humanities, and health professions. In contrast, however, women accounted for less than one-quarter of full-time undergraduate enrolment in engineering and applied sciences, and in mathematics and physical sciences.

From 1971-72 to 1989-90, the number of women enroled in engineering and applied sciences in Canada increased from 670 to 5,800 at the undergraduate level, and from 103 to 930 at the graduate level. While these figures represent significant increases, the proportion of women enroled in engineering and applied sciences is still disproportionately low: 15% at the undergraduate level and 14% at the graduate level.

Initiatives have been taken, at the federal, provincial, and institutional levels, to encourage participation by women in the many post-secondary opportunities which are available to them. As an example, 2,500 Canada Scholarships are awarded by the federal government each year to first-year students in the natural sciences and engineering. Of these, at least 50% in any given institution must be awarded to women. Such initiatives, along with the various efforts of the institutions themselves to attract and assist mature women in returning to continue their studies, have facilitated the dramatic increases in enrolment.

Native citizens

The federal government through the Department of Indian and Northern Affairs is responsible for the education of Indians and Inuit. Since the mid-1970s, the Post-Secondary Assistance Program has provided direct funding of tuition and living expenses of Native students. In 1989, a new funding policy was implemented through the Post-Secondary Student Support Program which allows greater Native jurisdiction over education, and focuses on student performance and graduation. Also recently introduced was the Indian Studies Support Program, which provided funding of post-secondary programs designed for Indian students or Indian post-secondary institutions (such as the Saskatchewan Indian Institute of Technology). Unique among the latter is the Saskatchewan Indian Federated College, affiliated to the University of Regina, and the only Indian-controlled post-secondary institution in North America.

A major proportion of Canada's Native peoples are located in the sparsely populated North; and special efforts have been made by the territorial governments to provide access to post-secondary education. In the Northwest Territories, support is given to assist attendance at provincial universities in the south. The Yukon is able, in co-operation with provincial universities, to provide university course work through Yukon College. In both territories, a decentralized community college system assists access to that level of study.

Persons with disabilities

A special effort has been made in all provinces to increase the participation of disabled persons in post-secondary programs. Higher education institutions have played an important front-line role in this regard. Special support has been provided to enable the institutions to increase their capacity to receive disabled students; this has been used principally to improve access to existing buildings, and for programs that provide special support services, equipment and learning materials.

Under the auspices of the Department of the Secretary of State of Canada and the Minister Responsible for the Status of Disabled Persons, three centres of specialization were established in 1984 at universities across Canada with the aim of removing barriers which face disabled students seeking education. The three centres are: the Atlantic Centre of Research, Access and Support for Disabled Students at Saint Mary's University in Nova Scotia, the Centre for Communicative and Cognitive Disabilities at the University of Western Ontario, and the Western Canadian Centre of Specialization in Deafness at the University of Alberta. These centres are also linked with other resource centres to form a network of expertise, experience, and qualified human resources.

Transitional programs at community colleges in Regina and Saskatoon, Saskatchewan are offering dedicated academic upgrading programs to the hearing-impaired. Ontario's community colleges also offer a wide variety of preparatory programs specially designed to enable disabled students to acquire the skills necessary to enter regular college programs.

Despite these efforts, however, in 1983-84 nearly half of all Canadians with disabilities had not studied beyond grade eight and only 4% had some form of post-secondary education.

Mature students

Mature students, i.e., students in the non-traditional age group, constitute an important part of the potential future clientele of post-secondary institutions. Universities and colleges have responded to potential students' demands for lifelong learning opportunities in a number of different ways. A wide variety of programs and courses have been introduced at the institutional level to enable students to pursue their post-secondary education and training on a part-time basis. The development and introduction of innovative program delivery methods, including distance education, have helped to meet the education and training needs of students who live in communities distant from post-secondary institutions.

FINANCIAL ASSISTANCE

In addressing the issue of accessibility to Canada's post-secondary institutions, one must also consider the question of finances.

Government involvement in student assistance programs began in 1964-65 with the introduction of the Canada Student Loan (CSL) program by the federal government. The provinces, with the exception of Quebec which has its own separate program, accepted responsibility for administering the CSL program and shortly thereafter introduced complementary programs of loans and bursaries. The CSL programs provide loan assistance to Canadian citizens and permanent residents enroled in post-secondary institutions, as designated by the individual provinces.

Despite significant changes in post-secondary education and its clientele, student assistance programs have remained relatively unchanged since coming into existence. The split responsibility between the federal and provincial governments has made it difficult to implement change. Although joint studies of student aid needs have been undertaken on occasion, they have not resulted in any formal agreement between the federal and provincial governments for a new and comprehensive student assistance program.

INTERNATIONAL STUDENTS

There exists a general consensus in Canada that having international students present on Canadian campuses is both desirable and beneficial. The reasons are several: other countries have provided opportunities for advanced education to Canadians in the past, and it is now deemed proper for Canada to do the same; Canada must share in the responsibility to alleviate inequalities which exist throughout the world; educating foreign students is an excellent way to provide good relations with other countries while improving Canada's ability to function effectively in a global economy; foreign students provide an important resource for the university and college communities.

Although there is general agreement on these notions, the number of international students in Canadian post-secondary institutions since the early 1980s has not reflected a steady pattern of growth or decline, the reason for which is somewhat unclear. It is possible, however, that the high number of international students in the early 1980s was an aberration caused by the introduction of full fees for foreign students in the United Kingdom and elsewhere, and that the number dropped back to a more normal level when Canada itself introduced differential fees. Even so, Canada, in 1989, had close to 49,000 international students in its post-secondary system, most of whom were full-time. Relative to Canada's population and in absolute size, this is one of the largest representations in the world.

Scholarship support and fee waivers have greatly reduced the impact of international student fees, especially for certain targeted groups, such as Canadian International Development Agency scholars and students sponsored by multilateral agencies to which Canada contributes. The latter include the United Nations, the World Bank, the Commonwealth of Universities, and La Francophonie. Some provinces, such as Quebec and Ontario, provide support and differential fee waivers for certain countries.

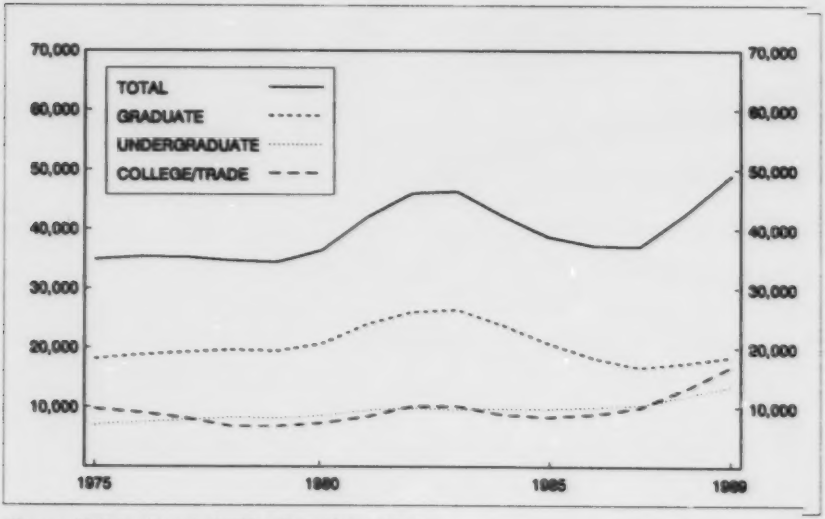
The number of international students studying in Canadian post-secondary institutions has increased substantially since the mid-1970s. Between 1975-76 and 1989-90, the number of international students grew from 9,684 to 16,863 at the college level and from 25,170 to 32,161 at the university level.

At the undergraduate level, the number of international students was relatively stable during the late 1970s. Enrolment then grew rapidly over the period from 1979-80 to 1983-84 followed by an

equally steep decline from 1984-85 to 1987-88. Recent statistics indicate that the number of undergraduate international students is once again on the increase, with 18,546 students in 1989-89. In contrast, at the graduate level, international enrolment has risen steadily since the late 1970s, increasing from 6,985 in 1975-76 to 13,615 in 1989-90. Graduate students now make up 42% of all international students at universities.

Full-time master's degree enrolments of international students in 1988-89 numbered over 5,000, an increase of 17.1% over the previous year. The number of international doctoral students also increased by 22.3% in 1988-89 and reached 4,500.

International Students in Canadian Post-Secondary Institutions by Level of Study, 1975 to 1989



Source: Statistics Canada (1992), adapted from table A1.

Institutions, federal government departments (External Affairs, Secretary of State, Employment and Immigration, and Industry, Science and Technology), and the provinces are all well aware that information materials for foreign students on Canadian higher education could be improved, and efforts are being made to produce more effective materials. Canada's recent ratification of the UNESCO Convention on the Recognition of Studies and Diplomas (Europe region), and the decision to create a national centre of information on international credentials are steps in that direction.

STUDENT GOVERNMENT AND SERVICES

A range of student services are provided on most campuses. These include financial aid, counselling, housing, health services, chaplaincy, food services, athletics, and employment centres. Some of the larger campuses also have an international student advisor. The extent of the services provided varies from institution to institution, as does student government. Through democratic processes, students on each campus elect officers and delegates to represent them and to serve on various institutional committees. On a national level, the Canadian Federation of Students provides a common framework within which students can communicate, exchange information, and share experience, skills and ideas.

CONCLUSION

Over the last quarter of a century, Canada has successfully implemented a policy of mass education at the post-secondary level. As a result, the student body of 1990 is not only much larger, but also much more diversified and representative of all segments of the population.

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PROGRAMS

Jeffrey Holmes

INTRODUCTION

Canada is an immensely diverse country, geographically and socially — a diversity that is well reflected in its institutions of higher education and their program offerings. In the words of Edward Sheffield, founder of the Canadian Society for the Study of Higher Education, "Any attempt to generalize about higher education in Canada must begin with a disclaimer: there will be at least one exception to almost every statement that can be made."

NON-UNIVERSITY SECTOR

Community colleges in Canada defy simple categorization. Some are large, multi-campus institutions; some are single-campus; still others serve as brokers for services provided by other institutions and community agencies. Some offer programs of great variety — university transfer; career, technical and technological; apprenticeship training; remedial instruction; general adult education; training for business and industry — while others limit themselves essentially to trade and vocational training and continuing education. Only two institutions in Canada offer a polytechnic education — Ryerson Polytechnic and the Technical University of Nova Scotia. Independent teacher training institutions were abolished during the 1960s, with their programs being transferred to the universities.

Generally speaking, however, the community college still places emphasis on programs of a technical nature, directly geared to the requirements of the workplace for trained technicians or junior administrators. Colleges also offer sophisticated technological courses. College programs last from a few months to one, two and three years for entry to the labour market, and two years for entry (some with advanced standing) to the university.

According to John Dennison and Paul Gallagher (1986), the colleges responded exceedingly well in their founding years to society's call to "open their doors" by developing curricula previously unheard of in Canada:

> They offered a deliberately broad curriculum, as broad as their provincial legislation would allow. All of them offered a rich new variety of technical or career programs intended to lead to immediate employment in new occupational areas, with the expectation that graduates would not require retraining in a few short years because of the breadth and substance of these new programs.

In the field of adult basic education, thousands of Canadians "who did not have the scholastic credentials to study or train at the post-secondary level were given a 'second chance'; colleges dipped down, well below the traditional post-secondary level to provide upgrading for adults short of basic literacy skills." Soon, "these basic education programs were expanded to include literacy education for its own sake."

The most recent curriculum innovations in community colleges have been custom-designed retraining programs for business and industry, several forms of training in English or French as a second language, the establishment of business development centres, and the provision of special programs and services for international students.

UNIVERSITY SECTOR

Universities in Canada range in size and complexity from a few with less than 1,000 students, providing first-degree courses in the liberal arts, to those enrolling more than 20,000 students and providing programs in arts, science, and the professions, leading to the baccalaureate, the master's degree, and the doctorate.

In the university, teaching is organized in courses, the vast majority of which may be used for credit toward a degree. While formats vary, course instruction is generally offered through three lecture hours a week (with additional laboratory time in certain disciplines), and the typical full-time undergraduate will be registered in five such courses a year.

Most degree programs in Canada do not include formal work periods as requirements, although those in teaching, medicine, and nursing, among others, require supervised practice or clinical activity. Nevertheless, work-study, or co-operative ("co-op") programs have increased rapidly in popularity and importance since the pioneering work of the University of Waterloo and others, a decade or more ago. Co-operative programs involve the alternating of periods of supervised fieldwork with periods of study on campus. Waterloo offers the option to qualified students in engineering, architecture, and the arts and sciences. More than twenty universities, and even more community colleges, now offer co-op programs at both the undergraduate and graduate levels.

In the character of their academic programs, Canadian universities reflect the influences of their European ancestry, their neighbour to the south, and the exigencies of their own environment. Since the first universities arose primarily as undergraduate institutions, it is not surprising that, at that level, they closely resemble their European counterparts.

Until quite recently, the Canadian "pass" degree resembled the British three-year program — although it had far more general requirements — and, unlike in the United States, a tradition of the honours degree persists. This requires an additional (fourth) year of study, and involves, after the first year, an intense specialization in one or two disciplines. Until recently, the honours program was considered the normal route to graduate studies, with the pass degree reflecting a more general education, primarily for those not intending to do graduate work, although perhaps going on to professional study. Recently, there has been a gradual transition to a four-year format for the pass degree. Requirements vary by institution, but normally involve concentration in one or more disciplines (although this rarely accounts for more than half the courses in a given program). In addition, some course work in other designated categories may be required; but it is common for students to take courses in a number of subjects. In other words, the typical undergraduate degree in Canada and the content of the typical prerequisite years for first professional degrees are broad rather than specialized. In Quebec, by contrast, undergraduate programs in the francophone sector are highly specialized. There is a trend towards a more general education approach, but changes are slow.

Programs leading to specific professions — engineering, education, and pharmacy, for example — may be entered directly from secondary school (except in Quebec). In others (e.g., law, dentistry, and medicine), students will usually spend at least two (more often three or four) years in an arts and science program — and may even take a graduate degree to improve their chances of admission to such programs.

Students in professional programs are usually required to follow a core curriculum but are free to choose a number of elective courses. The tendency, though, is towards a reduction in general education content.

Interdisciplinary studies have been making headway in recent years, often in the form of centres or institutes within universities. The disciplines involved may be drawn from one area of study, but increasingly they cover a range (e.g., ethics), which brings together medicine and many of the disciplines of the humanities, and Canadian Studies which, in its broadest form, almost spans the curriculum. Women's Studies and Environmental Studies are other examples of this new type of study program.

There are more and more programs leading to baccalaureate-level certificates and diplomas, particularly in business, management, informatics, and environmental sciences. These reflect the attempt by universities to respond to the needs of adults in a labour force trying to adapt to a rapidly changing economy.

Graduate programs have tended, much more than undergraduate programs, to be influenced by the United States. At both the master's and doctoral level, considerable emphasis is placed on course work. Master's programs may involve a thesis, or may require a heavier body of course work, along with a final comprehensive examination. In some professional areas, the thesis requirement may be replaced by a practicum. Although a master's program will normally involve at least a year of full-time study, a residency year is not usually required. Master's degrees range from the research-based M.Sc. and M.A. to a practitioner's credential in a profession.

The Ph.D. is the standard doctoral degree; normally it requires at least two years of study beyond the master's, and often four or more. All doctoral programs require a dissertation. The Ed.D. is a notable development in the discipline of education.

Finally, a range of diploma and certificate programs are available at the graduate level, particularly in the health sciences.

DISTANCE EDUCATION

Universities have provided education at a distance since Queen's University offered the first correspondence course one hundred years ago. Eighty years later, not long after the launching of Britain's Open University, Télé-université was created in Quebec, to be followed by Athabasca, in Alberta, and British Columbia's Open Learning Agency.

The British Columbia distance education system is particularly remarkable in that it offers three types of service: The Knowledge Network offers general interest programs, including self-directed studies, schools programming, children and family programs; The Open College offers career, technical, and vocational courses and programs, as well as basic adult education; and The Open University offers courses which lead to the Bachelor of Arts degree, the Bachelor of Arts in Science, and the Bachelor of Administrative Studies.

In Quebec, Télé-université, established in 1976 and a constituent part of the Université du Québec, offers province-wide distance education services. Undergraduate courses and programs in the humanities, social sciences, communications, computer science, the cultural aspects of science and technology, and the pedagogical applications of computers are proposed to its clientele.

The Ontario Institute for Studies in Education has run some thirty audio-conference courses over the past decade, mostly for Anglophones, but with an increasing number in French.

Conventional universities themselves have used distance education to reach outlying areas, as in the case of Memorial University of Newfoundland, or for continuing professional education, as with Dalhousie University in Nova Scotia. There is, however, still a lack of recognition of distance teaching as the equivalent to regular teaching of an academic discipline.

Many community colleges across the country, including the northern territories, have used their distance education capabilities for years, and the concept of the "college without walls" is part of the Canadian community college culture.

The choice of Vancouver as base for the Commonwealth of Learning (a co-operative approach to distance education serving the British Commonwealth) emphasized Canada's interest in systems which will reach small population centres scattered across a vast country.

CONTINUING EDUCATION

Despite an enrolment of hundreds of thousands of part-time and continuing education students, a conservative attitude prevails with regard to continuing education. The idea of lifelong learning is still not fully reflected in university practices, and the common view is that continuing education should recover its full costs through fees.

A special summer program brings a number of senior citizens to college and university campuses each year. Elderhostel, a network of colleges and universities in North America and Europe, offers short, low-cost residential programs for people over sixty. Courses are taught by regular faculty, and topics can range from the study of volcanoes to wine-tasting tours in Europe. More than fifty Canadian institutions now offer the program.

GENERAL OR LIBERAL EDUCATION

The proliferation of courses and subjects since the 1960s has contributed to the current back-to-basics cry from business circles and society in general. Questions about the need for more general or liberal education (the two terms are frequently used to mean the same thing but the same thing is rarely defined in the same way) are raised with increasing frequency.

Dennison and Gallagher (1986) note the concern in the colleges "to find ways and means of increasing the general education component of the curriculum, particularly within vocational programs."

CONCLUSION

Dennison and Gallagher (1986) conclude that the challenge for educators in all sectors of higher education in the third millennium will be:

> to fashion a curriculum which provides the basis for a lifetime of learning, for adjustment to technological change, for emphasis upon the quality of life, and for multi-dimensional literacy. The heart of the curriculum of the future should be whatever will sustain the individual in a world of unprecedented change and complexity.

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CHAPTER 7

RESEARCH

Charles H. Bélanger and Robert Lacroix

INTRODUCTION

The national and international reputation of post-secondary institutions in Canada is determined largely by the research which takes place in universities and colleges. In fact, research constitutes an integral part of the normal workload of university professors. Their productivity is evaluated in terms of both research and teaching. Research in universities and colleges is of particular importance in a country like Canada, which finds itself behind most industrialized nations in the area of research and development (R&D).

This chapter provides a brief overview of the organization, funding, input and output of research carried out in post-secondary institutions.

THE PRINCIPAL PLAYERS

The relative contribution from the public and the private sectors toward research and development is more or less the same in all the member states of the OECD (OECD, 1984). However, in these same countries, 60% of all R&D is *carried out* by industry, about 20% by universities and the remaining 20% by other non-profit organizations such as public laboratories. Canada finds itself in a rather unusual situation since the private sector funds and carries out only 45% of the research, thus leaving a considerable proportion of publicly funded research to be carried out in universities. In Japan, for example, 75% of research is funded by the private sector; in the United States and in the former Federal Republic of Germany over 70% of research is carried out by the private sector.

The federal government is the largest source of direct funding for research carried out in Canadian universities (Secretary of State, 1990; AUCC, 1990). The grants emanate primarily from three research councils: the Natural Sciences and Engineering Research

Council (NSERC), the Medical Research Council (MRC), and the Social Sciences and Humanities Research Council (SSHRC). In addition to supporting basic research and scholarship, NSERC focuses on the industrial applications of scientific and technological discoveries, while MRC promotes technological integration of health services in the public and private sectors. Both SSHRC and NSERC reserve a percentage of their budget for the support of strategic research in fields of national importance as defined by the federal government and the academic community. The three councils distribute grants and scholarships on the basis of a highly competitive and rigorous peer-adjudication process.

The federal government also funds research carried out in universities and colleges through the intermediary of its departments and agencies. For example, the National Research Council of Canada, Health and Welfare Canada, National Defence, and Energy, Mines and Resources Canada all devote considerable sums to academic research.

On a pan-Canadian level, one should also stress the role of the Department of Industry, Science and Technology Canada (ISTC), the Science Council of Canada, the Canadian Federation for the Social Sciences and the Canadian Federation for the Humanities. The Department of Industry, Science and Technology Canada supports key sectors of research and technology, such as artificial intelligence and robotics. A senior public servant from ISTC presides over the Inter-Council Committee which links the three granting councils. The Science Council of Canada — a para-governmental agency whose members are appointed by the government — examines the major scientific and technological dossiers, recommends orientations to the government, informs the public on the importance of science and technology, and ensures that various economic interests are constantly made aware of the issues in question. The two federations — for the social sciences and for the humanities — lobby public officials and attempt to increase public awareness of the importance of their respective disciplines.

Since education falls under provincial jurisdiction, any provincial government can exercise its influence by funding specific fields which may overlap with areas funded by the federal government. Quebec is the only province which has its own central research fund (Fonds pour la formation de chercheurs et l'aide à la

Table 5.1

External Support to Research Carried Out in the University Sector by Source of Funds, 1971-72 to 1989-90

	Federal Govt.	Provincial Govts.	Business Sector	Higher Education	Others	Total
			Millions of dollars			
1971-72	134	30	11	226	35	436
1972-73	134	37	12	212	39	434
1973-74	141	42	13	210	43	449
1974-75	147	45	13	231	49	485
1975-76	156	50	13	294	55	568
1976-77	167	55	15	332	55	624
1977-78	192	60	15	383	63	713
1978-79	210	70	19	390	80	769
1979-80	234	76	51	430	53	844
1980-81	288	96	56	473	57	970
1981-82	354	114	68	495	67	1,098
1982-83	393	142	68	603	63	1,269
1983-84	457	153	80	581	77	1,348
1984-85	517	169	87	576	81	1,430
1985-86	515	178	102	642	88	1,525
1986-87	523	207	105	708	92	1,635
1987-88	561	217	136	695	111	1,720
1988-89	594	230	145	736	117	1,822
1989-90	629	244	154	780	124	1,931

Source : *AUCC (1990), p. 110.*

recherche, or Fonds FCAR) which operates on the model of the three federal councils. As a general rule, provincial authorities do not want the federal government to completely dominate basic and applied research. In order to avoid this, they have created in one form or another their own departments of science and technology, with funding allocated from various ministries. Like the federal agencies (excluding the three research councils), the provincial agencies usually award grants and contracts according to specific priorities relating to such provincial matters as regional expansion and policy making. This type of research support thus implies a less competitive allocation, although it is more tailored to the needs of individual provinces.

In addition to direct funding, provincial governments cover almost all the general expenses and other indirect costs for research through the regular operating budgets that they give to universities. As Table 7.1 indicates, these expenses are far from being negligible. The universities also use their own research funds in order to develop certain discipline-based research and to encourage their researchers.

Industry is also providing on a more frequent basis another source of funding for academic research projects, usually related to science and technology. This involvement can take the form of a joint venture, a matching grant with the public sector, or outright philanthropy.

During the last few years, college instructors in institutions with university transfer functions have become increasingly involved in traditional discipline-based research and are, in fact, eligible for funding under the Social Sciences and Humanities Research Council. A number of colleges and institutes of technology have, over the last three years, placed a growing emphasis on applied research (development), usually in collaboration with private or public sector partners.

The question of the organization and funding of research at various levels continues to be a constant subject of debate. In order to communicate the results of their research and to make their disciplines known to financial backers, researchers generally belong to professional or discipline-based associations (such as the Learned Societies) or to umbrella organizations which group several disciplines or professions (e.g., the Royal Society of Canada).

INPUT AND OUTPUT

Statistics Canada is responsible for the only attempt to assess the overall input costs of academic research, including the value of professors' research time (Statistics Canada, 1988). Basically, the approach used for this study was first to estimate the research time of professors, then to deduct from the total expenditures of the universities the equivalent amount for research activity and add in the total amount for research grants and contracts. This process was carried out for each university and then totalled. Obviously this evaluation method implied numerous hypotheses which, for the most part, were reasonable and necessary.

Although Table 7.1 shows the costs of all research activity, Table 7.2 provides the approximate input costs of academic research activity for the four main regions of Canada. This method of cost estimate is similar to the one used in the private sector of the economy. The costs are broken down into three fields of study and cover a period of eight years from 1979-1980 to 1986-1987. According to Table 7.2, the estimated costs for 1986-1987 of all R&D expenditures carried out in post-secondary institutions would amount to $1.64 billion. This sum is considerably higher than the $1.02 billion reported by universities in 1986-1987, which is limited to the total of various research grants, contracts and donations to universities (Statistics Canada, 1991, Table A.8).

Table 7.2 also indicates that of the estimated costs of academic research in Canada, 7.4% are attributable to the Atlantic Provinces, 21.8% to Quebec, 40.7% to Ontario and 30.3% to the provinces in the West. This regional distribution of R&D in universities is quite

TABLE 7.2

Estimation of R&D Expenditures in the Higher Education Sector, 1979-80 and 1986-87 *(in million dollars)*

	Sciences	Health Sciences	Humanities and Social Sciences	Total
		Millions of dollars		
1979-80				
Atlantic	26.1	17.1	15.7	58.9
Quebec	87.5	62.9	54.9	205.2
Ontario	127.9	102.8	102.6	333.3
West	95.2	87.9	66.1	249.2
Total	336.6	270.7	239.3	846.6
1986-87				
Atlantic	54.9	31.8	30.1	116.9
Quebec	155.1	112.9	89.0	357.0
Ontario	258.6	202.2	206.0	666.8
West	188.4	176.1	132.8	497.2
Total	657.0	523.0	457.9	1,637.9

Source : *Statistics Canada (1988).*

different from the overall R&D activities in Canada, nearly 55% of which are concentrated in Ontario.

The distribution of estimated costs of expenditures for R&D in universities according to fields of study is as follows: 27.9% in the social sciences and humanities; 31.9% in the health sciences; and 40.1% in engineering and the natural sciences. Once again, the figures for estimated costs provide a different picture than normally given by the figures for research grants and contracts allocated to each of the fields of study.

Finally, if the figures for 1979-1980 are compared to those of 1986-1987, it becomes obvious that the estimated costs of R&D in universities increased 93.4% over a period of eight years. In addition, all the regions experienced a similar increase in R&D expenditures over the same period, with the exception of Quebec where the increase amounted to 74%.

With regard to the output of research activity, the *Science Citation Index*, which provides an annual listing of scientific articles published in the vast majority of scientific journals throughout the world, indicates that from 70% to 90% of these publications emanate from universities or affiliated institutions. Two recent studies carried out by Braun, Glanzel and Schubert (1987 and 1989) establish that by rating the number of entries for each of the 107 countries included in the sample, the following countries ranked in the top ten: (1) the United States, (2) Switzerland, (3) Sweden, (4) The Netherlands, (5) Denmark, (6) the United Kingdom, (7) Canada, (8) Belgium, (9) Finland, and (10) the Federal Republic of Germany.

A second research output is manifested in the training of highly qualified labour and new researchers. Figures compiled by Statistics Canada indicate that, in 1988, Canadian universities granted 103,775 undergraduate degrees and 18,684 postgraduate degrees. Master's degrees and doctorates (Table 7.3) are represented regionally as follows: 6.3% from the Atlantic Provinces; 27.9% from Quebec; 43.1% from Ontario; and 22.7% from the provinces in the West. In addition, graduation statistics increased by 31.8%, a very substantial growth given the fact that the number of full-time faculty only increased by 7.5% over the same period. This growth in the number of degrees granted varied considerably across the regions from 51.0% in Quebec to 17.0% in Ontario.

Graduate Studies Degrees Awarded in Canada, 1980 and 1988

	1980			1988		
	Master's	Doctorate	TOTAL	Master's	Doctorate	TOTAL
Atlantic	908	72	980	1,091	93	1,184
Quebec	3,115	333	3,448	4,606	601	5,207
Ontario	6,042	836	6,878	7,011	1,038	8,049
West	2,367	497	2,864	3,561	683	4,244
TOTAL	12,432	1,738	14,170	16,269	2,415	18,684

Source : *Statistics Canada (1990), table 17.*

It is obvious that research activity varies from one institution to another and depends on the type of institution and the overriding conditions and entrepreneurial spirit. The size of the institution, the teaching load and the graduate programs are all factors which affect the infrastructure for research and productivity. However, the differentiation of roles creates a range of possibilities which all institutions, large and small, attempt to maximize in order to improve the results of their research.

CONCLUSION

Compared to the leading countries of the OECD, research in Canada receives a low percentage of funds from the private sector, and most research is carried out in universities. This situation makes Canada particularly vulnerable. On the one hand, governments, the main financial backers, constantly find themselves in a state of financial restriction. On the other hand, despite the fact that research constitutes a duty on the part of all university professors, the actual commitment is left to the energy and initiative of the individual, a situation which results in rather variable performances. With regard to the funding and the carrying out of research, the establishment of a balance between the private and the public sectors remains a constant and necessary goal. The development of the country and the strength of its presence on the international scene will depend on that accord.

The heart of the debate is more than an academic exercise whose only objective is to obtain more money for a greater number of researchers. In the final analysis, beneath the search for this balance between the public and private sectors lies a very serious question: what would happen to basic research if the share of public funding were to continue to diminish? It is essential that this debate remain open and that R&D be prevented from sinking into oblivion.

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THE SERVICE FUNCTION OF CANADIAN HIGHER EDUCATION IN CANADA AND ABROAD

Claude Lajeunesse and Robert Davidson

INTRODUCTION

This section provides an overview of the evolution of the community service function of higher education institutions in Canada. The nature and extent of their involvement in international co-operation and development will also be discussed.

COMMUNITY SERVICE: AN EVOLVING FUNCTION

It is customary to define the three basic functions of higher education as involving teaching, research and community service. This last function is largely inseparable from the research and teaching missions of higher education. The service function of higher education refers both to formal and informal research and to educational activities through which institutions respond to societal expectations, needs and demands. As such, the means through which higher education fulfils its community service function have evolved with changing socio-economic conditions.

Moreover, universities and community colleges have traditionally understood their community service function quite differently. Community colleges have long recognized community service as an institutional priority. Indeed, community orientation is a distinctive characteristic of Canada's community colleges (Dennison and Gallagher, 1986). Their program mix, their student mix, and their specialized services and activities are largely oriented to serve the needs of their local, regional, and provincial communities.

The community service function of universities has been less well articulated and organized than that of the community colleges. The role of universities as centres of independent scholarship,

comment, and criticism has influenced the way in which they have carried out their community service function. Universities have viewed community service largely as a by-product of their basic research and teaching missions. As a consequence, community service activities have remained largely ancillary to the mainstream academic life of universities and less central than similar activities in community colleges. Nevertheless, the development of Canadian universities cannot be properly understood without reference to their surrounding communities. The role played by agricultural service in the development of universities in Western Canada, and in other rural regions of the country, illustrates how universities, as social institutions, reflect the particular conditions or circumstances of the society of which they are a part.

Higher education institutions have, until recently, defined their community service function more in social and cultural terms than in economic terms. They have perceived themselves as a community resource, representing educational and scientific assets as well as cultural and recreational centres available to all. For faculty, community service has involved bringing knowledge and expertise to bear on the debates, issues and problems facing society.

By encouraging their faculties to offer their services to various social and economic groups, institutions of higher education have sought to make knowledge more accessible to the surrounding community. Much of this activity has gone on unnoticed because it has not been formally organized or structured. It involved individual faculty members bringing their expertise to bear on issues facing society through their participation in public fora and debates, by acting as volunteers in community organizations, or by engaging in consulting and contract research. The recent emergence of largely self-supporting research centres and institutes has structured and formalized research and other consulting activities involving a client relationship.

Universities have also promoted greater accessibility by diversifying their course offerings. Universities have made special efforts to reach beyond traditional clienteles to include social groups that had little or no contact with the higher education milieu. These efforts led to the development of part-time study programs and to adult or continuing education courses. Institutions sought to fulfil their community service function by investing in extension services. Moreover, such institutions as the Télé-université in Quebec and

Athabasca University in Alberta were created specifically to promote greater accessibility to higher education.

The role of higher education has become the object of much discussion and debate since the mid-1980s. The debate centres on how higher education can contribute more effectively to the social and economic development of Canada (Science Council, 1988). This questioning is based on the conviction that knowledge and people have become key factors in national growth and development, and that Canada cannot continue to rely exclusively on its natural resources to fuel its economy. A knowledge-intensive economy requires an educational sector that is in close touch with the needs of the economy and its principal agents. The social and economic values of higher education to society are changing to include not only the advancement and transmission of knowledge, in and of themselves, but also a greater participation of institutions in the transfer and application of this knowledge in the economy. From this perspective, community service is no longer seen as an ancillary activity. Rather, higher education institutions are being urged to become "service institutions," by directing their research and education missions to community service purposes. As service institutions, they also become crucial factors in regional development strategies.

The traditional concern about the social or civilizing functions of higher education is being replaced by an emphasis on the responsibilities of higher education towards the economic system. Priority is being given to ways higher education can make a more explicit and immediate contribution to economic growth and social development. This instrumentalist approach to the community service function has led to closer links between the private sector and the university community. The Corporate-Higher Education Forum is a prime example of this rapprochement between the "office tower" and the "ivory tower."

EMERGING FORMS OF COMMUNITY SERVICE ACTIVITIES

Institutions of higher education continue to perform their community service function through the consulting and advisory activities of their faculties, through their part-time study programs, by expanding

their adult and continuing education activities, etc. Emphasis has shifted, however, to research and educational activities designed to respond more directly to the interests and concerns of the marketplace. The current focus is on knowledge and technology transfer through the development of linkages with the private and public sector partners.

The relatively weak research capacity of Canadian industry and its limited involvement in the training and retraining of its workforce have underscored the need for institutions of higher education to reorient part of their research and educational activities to meet the needs of the country's evolving economic and social needs. Institutions have responded by experimenting with a wide range of mechanisms aimed at carrying out expanded economic responsibilities. The emerging linkages with private and public sector partners that are being explored can be grouped into three categories.

Institutional support to linkages

Offices of technological transfer have proliferated in recent years (Science Council, 1988), attesting to the importance institutions are attaching to interaction with the private sector. These offices offer a full range of technology transfer services to both faculty and to prospective private sector partners.

Research-based linkages

The Strategic Grants programs of the federal granting councils and the Matching Grants Policy for the funding of these councils exemplify a policy thrust aimed at fostering linkages between users and producers of knowledge.

University/private sector research centres are emerging throughout the country and in all fields of science and technology. Their growth is partly the result of such initiatives as the *Actions structurantes* program in Quebec, the Centres of Excellence program in Ontario and the federal Networks of Centres of Excellence program. These programs encourage universities to develop and carry out joint research initiatives with public and private sector partners. These research centres are deemed to be the basis of lasting partnerships.

Spin-off firms have emerged throughout the country. In its 1986 Annual Report, the University of British Columbia, for example, states that it has initiated 53 spin-off companies with an estimated annual revenue of $87.5 million in 1985. Beyond financial reward to the institution and individuals involved, such firms have an undeniable impact on the local, regional, and national economies. They stimulate other parts of the economy. They provide employment opportunities, especially for highly qualified personnel. They revitalize local and regional economies by creating a climate of economic diversification and technological innovation.

Educational-based linkages

The principal form of educational linkage is co-operative education, which is held in very high regard by employers. Universities and colleges are rapidly expanding their co-op programs.

In addition, institutions are modifying their regular curricula to promote knowledge and technology transfer. They are also rapidly developing short career-development courses on such topics as patenting and the selection, management and launching of new products. Higher education institutions have not only continued to expand their continuing and distance education activities, they are also increasingly offering on-site, custom-made training programs for private and public sector firms.

Conclusion

The community service function prompted the expansion and redefinition of the economic responsibilities of Canadian higher education. However, the notion of enterprising faculty and institutions is not without its detractors, especially in the university sector. There is a fear of universities becoming involved in what is seen as the realm of the private sector at the expense of their core educational and research missions. Others fear that academic entrepreneurship may undermine the traditional sharing of knowledge and free exchange of ideas that have characterized universities until now. It will be important to distinguish between the current focus and the essence of higher education institutions in the emerging debate.

INTERNATIONAL CO-OPERATION

There are numerous reasons why international academic contacts and exchanges have become an integral part of the activities of Canadian higher education. These include the international nature of scholarship, the rapid pace of scientific progress and the globalization of scientific and scholarly networks. Canada has benefited greatly, and continues to benefit, from sending many of its students and faculty abroad where they have expanded their horizons and gained valuable research experience. In fact, prior to the 1970s, the graduate programs of universities abroad were the major source of graduate education for Canadians in a significant number of disciplines.

Direct contacts by faculty, graduate study abroad, participation in international conferences, and research projects are the most common forms of international academic co-operation. Participation of Canadian scholars in the international academic community is made possible by the financial assistance provided by various public funding agencies. Scholarly exchanges are also promoted by formal agreements between the Government of Canada and foreign states, as well as between the latter and provincial government departments and agencies responsible for higher education.

The Government of Canada provided 500 awards in 1988-89 to graduate students from some 51 countries to pursue their studies in Canada through the Canadian Commonwealth Scholarship and Fellowship Plan. Similar awards were offered to Canadians by participating Commonwealth states.

The Government of Canada Awards program provides scholarships to over one hundred foreign nationals to pursue their graduate and postgraduate studies in Canada. This reciprocal program offers Canadians similar awards to study in other countries.

Canada has also concluded academic exchange programs with numerous countries including China.

DEVELOPMENT CO-OPERATION

Canadian higher education institutions recognize that they have an important role to play in providing development education; in using science to solve problems in developing countries; and in supporting

the development of harmonious relations between Canada and peoples of the Third World.

Canada's official development assistance strategy has promoted the involvement of higher education institutions in development assistance administered by the Canadian International Development Agency (CIDA). The strategy has emphasized human resource development, the achievement of institutional sustainability in receiving countries, and the promotion of new partnerships between Canadian institutions and their counterparts in developing countries. Much of this support takes the form of bilateral arrangements (CIDA) and of research projects funded by the International Development Research Centre (IDRC).

In 1987, CIDA brought 2,332 students and 1,698 trainees to Canada through its scholarships and training programs (Secretary of State, 1989). The agency also funded 1,166 students and 2,975 trainees studying in their home countries or in Third World countries. CIDA also administers the program of fellowships for students from countries of La Francophonie. These fellowships (350) are designed to enable students from developing countries to pursue their studies at the undergraduate, graduate, or postgraduate levels.

CIDA is also seeking to strengthen the educational institutions of the Third World. The aim is to provide training within the country, or in other Third World countries, rather than place Third World trainees in the regular degree programs of Canadian institutions. The primary role of Canadian institutions in this strategy consists in providing highly specialized and advanced programs which are not available in the Third World. It also involves the development of customized non-degree programs that are tailored to meet the particular needs of specific groups of Third World trainees.

Canadian and Third World institutions are, more and more, entering into partnerships that recognize their mutual and reciprocal interests. These partnerships extend beyond technical assistance to greater scientific and scholarly co-operation, because they are viewed as an integral part of the academic life of the participating institutions. The new forms of partnership are building on the academic co-operation that the IDRC has been promoting over the years.

CONCLUSION

Canadian higher education is composed of two distinct types of institutions: government-directed community colleges and autonomous universities. The specific nature of these two sets of institutions has determined the manner in which they have carried out their community service function. Moreover, the particular forms and nature of the service function have evolved in response to changing socio-economic conditions. This capacity to adapt to changing societal expectations, needs and demands is a tribute to the dynamism of Canadian higher education. It exemplifies the extent to which Canadian institutions are attentive to their local, regional, national and international communities.

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HIGHER EDUCATION AS A FIELD OF INQUIRY IN CANADA

John D. Dennison

INTRODUCTION

The Canadian higher education system engages a large and impressive list of scholars in a wide variety of disciplines and fields. It must be acknowledged, however, that one aspect of research, i.e., that which is focused upon the Canadian higher education enterprise itself, has received very limited and spasmodic attention. Given the aforementioned cost and complexity of the higher education system, this lack of scholarly inquiry is both surprising and disturbing. Higher education constitutes a huge "industry" in Canada and, as with any other industry, it is constantly beset by problems and issues which often remain unresolved or, in some circumstances, unexamined. In particular, questions relating to efficiency and effectiveness, quality of performance (of both the system itself and the graduates which it produces), and improvement of instruction, are often being asked, but rarely answered.

It is the purpose of this section to present a synopsis of the extent, content, and focus of current research in the field of higher education in Canada. In doing so, much of the discussion will draw upon the outstanding study conducted by Edward Sheffield in 1982. Dr. Sheffield's report was, and remains, the only major review of the topic to date.

THEMES OF INQUIRY

The term "research" will be applied quite liberally, adopting the definition from the Sheffield Report, i.e., "Research is interpreted broadly to include reflective inquiry and scholarship, empirical investigation, critical analysis and in-house studies for organizational use. It may be oriented to theory building, problem solving, policy formulation, or planning." (Sheffield, 1982, p. 4)

An analysis of the literature concerned with research in higher education in Canada, particularly since the period following the Second World War, reveals a number of themes, which are summarized in Table 9.1.

In the 1960s, post-secondary education dominated the policy agenda of provincial governments, and proposals to expand and diversify the system were common as the projected demand for places in the nation's universities reached alarming proportions. In

Table 9.1

Research Themes in Canadian Higher Education, 1960-1990

Planning the System	Operation of the System	Performance of the System
Data bases: students, job market needs	Student behaviour: retention, degree attainment	Placement of graduates
Accessibility: participation rates	Teaching and learning: instructional improvement, analysis of teaching	Academic outcomes
Policy analysis: policy formulation	Evaluation of academic units	Human resource development
Economics of higher education	Accountability studies	History of higher education
Needs studies: distance education, human resources planning	Management of retrenchment	Academic freedom
Environmental scans	Impact of technology upon higher education	Government-university relations
Supply and demand for highly qualified personnel	Governance: role of boards, senates	Public attitudes to higher education
	Unionization and its effects	Women's issues: equity, access
	Disadvantaged learners: adult literacy, Native studies, bilingual education	University-industry relations
		Studies of occupational stress
		Comparative higher education

most provinces, commissions and committees conducted comprehensive studies of student needs, institutional planning, and cost-benefit analyses of investment in post-secondary education. Research on human capital theory, conducted largely by the Economic Council of Canada, contributed to an unprecedented expansion of the system.

In contrast, the last two decades witnessed a consolidation and rationalization process as higher education has succumbed to more pressing policy agendas such as health, social welfare, energy, and the environment. In turn, research studies in higher education have become more diversified, with a primary emphasis upon measuring the quality and performance of the system, rather than its expansion.

In the last twenty years the themes of inquiry have tended to fall into the three categories reported in Table 9.1. Under each category, topics of research, gathered from the relevant literature, have been summarized. It should be noted that the themes tend to overlap and that much greater attention has been given to some (e.g., history and accessibility) than to others. The great majority of published studies have been concerned with issues relating to the university sector. Furthermore, approximately 30% of published research is in the French language.

THE PARTICIPANTS

As identified in the Sheffield Report, the sources of researchers in higher education in Canada are largely to be found in three areas: institutions of post-secondary education; associations and organizations concerned with higher education; and government departments.

Much of the research is not published nor is it easily accessible, while the great bulk of published research is the work of individual scholars, some without any institutional affiliation. Most scholars are housed in various departments of universities, colleges, and government agencies. A more detailed account of the sources of research activity follows.

Universities

Canadian universities house a number of academic units (departments, centres, and groups) which devote full time to research and preparation of graduate students in the area of higher education. The major centres include the universities of Alberta, British Columbia, Manitoba, Montreal, and the Ontario Institute for Studies in Education. The focus of research which emanates from these units varies with the background and interest of the individual scholars. Areas of investigation include financing, student accessibility and mobility, community colleges, institutional planning and analysis, education and the labour market, and evaluation.

Several higher education scholars are located in discipline-based departments including Sociology, Economics, History, Psychology, Political Science, and Philosophy. In each case, individual scholars have focused their attention upon higher education issues that relate to their discipline. Research studies produced by this group deal with topics such as accessibility and participation in higher education, analysis of teaching and learning, human capital theory and its applications, history of women's participation in universities, schooling and the labour market, and the relationship between economic, social, and educational planning.

The research productivity of graduate students at the master's and doctoral levels should not be overlooked. A number of theses and dissertations are produced each year which deal with a variety of issues relating to higher education.

Colleges and technical institutes

While research is not generally regarded as a priority nor a responsibility of personnel in non-university institutions, there is no shortage of issues relating to this sector which require the attention of researchers. In recent years, a small group of college instructors and administrators has conducted studies dealing with problems pertinent to this field. In particular, issues such as planning, evaluation of programs and instructors, curriculum development, college-industry relationships, and student learning have emerged as research topics.

Associations of scholars

A number of academic and scholarly organizations, formed to serve the interest of their members, devote a good deal of energy to the sponsoring of conferences and to the publication of journals which focus entirely or in part upon issues relating to the field of higher education.

Foremost among these bodies is the Canadian Society for the Study of Higher Education (CSSHE), formed in 1970, which attracts a diverse group of scholars and interested individuals from a wide variety of disciplines and backgrounds, all of whom share a primary interest in higher education in Canada. As part of the academic community, the CSSHE sponsors an annual conference, during which up to fifty papers are presented and discussed. Further, the society publishes the *Canadian Journal of Higher Education*, the only publication which devotes exclusive attention to issues relating to this field of inquiry.

A number of other associations include research studies on aspects of higher education as part of their conference agenda and journal articles. These include, for example, the Canadian Sociology and Anthropology Association, the Canadian Historical Association, the Canadian Society for the Study of Education, and the Canadian Association for University Continuing Education.

Although structured somewhat differently, two major national organizations have been instrumental in the initiation and support of notable studies of governance, finance, and planning of higher education in Canada. Each of these bodies, the Association of Universities and Colleges of Canada (AUCC), and the Canadian Association of University Teachers (CAUT), publishes a monthly newsletter which occasionally summarizes or promotes the distribution of research on aspects of higher education. For several years, the AUCC also sponsored the *Inventory of Research into Higher Education in Canada*.

Although located in the United States, the Association for Institutional Research includes a growing number of Canadian scholars who meet as a group and share the results of their work on topics pertinent to their interests.

Government departments and agencies

Although the great majority of studies either commissioned or conducted by government departments and agencies are not "published," a great deal of important research activity occurs under these auspices.

At the federal level, the Department of the Secretary of State and Statistics Canada have been responsible for an impressive number of studies dealing with characteristics of students, placement of graduates in the labour market, projections of enrolment, job market prospects, and analysis of highly qualified personnel. Similar studies have been carried out by Employment and Immigration Canada (EIC), Indian and Northern Affairs, Correctional Service Canada, and Industry, Science and Technology Canada (ISTC).

It should be noted that, as all levels of education fall within provincial jurisdiction, it is considered inappropriate for federal agencies to engage in debate over policy issues — a factor which somewhat limits their effectiveness in promoting or participating in higher education research.

At the provincial level, virtually all governments have created Ministries of Advanced Education and Job Training (or similar titles), which usually have a research capacity. Many studies conducted at this level, while somewhat local in perspective, are often well designed. Topics of research, the results of which are rarely circulated beyond the province, include strategic planning, evaluation of programs and graduates, cost analysis of programs, barriers to participation in higher education, and student mobility through the system.

In Ontario, a great deal of research has been carried out by the Council of Universities, while in Quebec several agencies are productive conductors of research. The latter include the Conseil des collèges, the Conseil des universités, the Fédération des CEGEPS, and the Conseil supérieur de l'éducation.

DISSEMINATION OF RESEARCH

In 1987, a National Forum on Post-Secondary Education in Canada was held in Saskatoon, Saskatchewan (IRPP, 1987a; 1987b). At this meeting, which involved a wide cross-section of scholars, administrators, faculty, students, government personnel and private sector representatives, concern was expressed about the limited dissemination of research studies conducted across the country. In particular, participants underlined the need for a comprehensive data base upon which policy decisions could be made. In response, the Department of the Secretary of State funded a meeting of federal and provincial researchers under the auspices of the Association of Universities and Colleges of Canada. This meeting resulted in the publication of an *Inventory of Research on Post-Secondary Education*, which revealed the extent of research activity being conducted in Canada.

Nevertheless, in a country with a limited number of researchers in specialized fields, as is the case in Canada, and faced with the obstacles of distance and language, it is difficult to financially support the publication of an array of professional journals, as may be found in the United States and the United Kingdom. There is the *Canadian Journal of Higher Education*, specializing in the subject. Other professional publications, such as the *Canadian Journal of Education*, the *Canadian Journal of Behavioral Science*, the *McGill Journal of Education*, the *Alberta Journal of Educational Research* and the *Canadian Vocational Journal*, include articles from time to time which relate to aspects of research in higher education.

A number of books, published by both university and professional presses, relating to higher education issues may be found on library shelves. Examples include such diverse titles as *Distance Education in Canada*; *The University: An Anatomy of Academe*; *Youth, University and Canadian Society*; and *Canada's Community Colleges: A Critical Analysis*.

As a result in large part of the financial support provided by the Social Sciences and Humanities Research Council of Canada (SSHRC), proposals for research on a wide range of issues in Canadian higher education are approved, conducted, published, and reported at national conferences. The range of support from SSHRC has been a vital factor in the encouragement of research activity in the

field of higher education, particularly with its recent emphasis upon the relationship between education and the world of work.

CONCLUSION

This chapter has attempted to identify those factors which are associated with the study of higher education as a field of inquiry in Canada. Clearly this topic is the domain of a limited number of academic researchers, probably no more than three hundred, including graduate students. In addition, administrative personnel in educational institutions, associations, and government departments do conduct projects which, strictly speaking, could not be defined as "research," pure or applied. Nevertheless, this latter group does qualify as researchers under a broader definition which includes reflective inquiry, as well as data collection and analysis for policy, planning and organizational use.

Given the investment of time, money, and human resources in the higher education enterprise in Canada, some critics might argue that much greater effort should be expended in analyzing its effectiveness, efficiency and overall performance. It is not difficult to suggest reasons for the lack of research volume — the jurisdictional authority of the provinces, which limits the scope of research that may be conducted or promoted by federal agencies; the small number of university departments which address the topic; the problems of "status" of any interdisciplinary field, as compared to discipline-based research; and the reluctance to ask "hard" questions or seek answers to highly complex and sensitive issues.

Nevertheless, there is an impressive cadre of scholars in Canada who have devoted much of their professional careers to the study of various aspects of higher education and, in doing so, have had a profound influence over policy decisions, planning strategies, instructional models, allocation of resources, and evaluation techniques, all of which have contributed to the distinctiveness of Canadian higher education.

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Chapter 10

CONCLUSION

André Girard and Norman Uhl

The demographic explosion in the years since the Second World War has been so great that Canada today has as many professors in its colleges and universities as there were students only a half a century ago. In this regard, the provinces and territories of Canada rank high among the more developed societies of the world. This rapid growth in student population must be appreciated to gain an understanding of Canadian post-secondary education.

Much of the increase in enrolment can be attributed to the large number of women now present on Canadian campuses. Women outnumber men in undergraduate programs, and it is only a matter of time — and perseverance — before they also outnumber them at the graduate level and achieve equal representation among faculty. At last, Héloïse knows she is equal to Abelard in this country.

Another reason for the increase in students is the proliferation of two-year post-secondary institutions. These colleges exist throughout the country, and though their names, goals and operations may differ greatly from province to province, it is now recognized that education does not normally come to an end after high school. Thus, the barriers separating social classes, which in the past excluded certain groups from post-secondary education, have for the most part disappeared.

A third factor which has caused an increase in student enrolment is the return of adults to the educational system. To meet the needs of this varied student populace, numerous and innovative modes of presentation have appeared. Culture, improvement, retraining are the key words. These terms modestly disguise the important and agonizing reshuffling of curricula and mores inside the traditional university: so much so that this influx of adults has changed the full-time characteristic of student life to one where part-time studies have attained significant prominence. This is not surprising, since family and professional obligations continue to play a major role in the life of these students who are generally more

mature, very determined, and frequently pressed for time. These factors may have a disturbing influence on certain traditions, customs, and communications in both the faculty meeting and the classroom.

But service to the constituency must be done, and the democratic university must oblige! Since 70 per cent to 90 per cent of funding is from governments, the taxpayer and voter, the town and its noises have intruded on the once quiet and shadowy campus. The Canadian university and college now sometimes resemble a two-tiered system with young, regular, full-time students who meet all the standard entry requirements, on the one hand, and "second chancers" who have broader experience and more disparate values, on the other. Newman's ideal has had its day (Newman, 1852).

Any new thinking concerning Canadian post-secondary education must give recognition to the needs and cultural differences of the larger number of Canada's linguistic minority, plus this nation's less numerous, if more visible, Native peoples. Still too frequently, these members of Canadian society are neglected or even forgotten in most of the provinces and territories.

Accessibility to Canadian colleges and universities also raises difficult questions concerning foreign students (see Chapter 5, International Students section). Canada must, of course, share in the responsibility of accepting students from the developing countries. This outreach must always be balanced, however, by an ongoing, continuous exchange with the developed countries. Such exchanges and sharing not only strengthen and give added depth to Canadian higher education, but also allow it to share in the preservation of knowledge and to contribute to the worldwide exchange of this knowledge in accordance with the traditional role of institutions of higher learning.

After extensive Canadian investment in higher education for thirty years, the past decade has been characterized by slow-down and no-growth, and a concomitant reversing of the expansive and enthusiastic momentum of the previous years. Faculty is aging and retiring, often without being replaced; although for the time being there are enough young replacements available. In many cases, resource holdings are no longer being expanded to keep pace with new publications; equipment is becoming obsolete and is not being updated at the same rate as in public and private non-university research organizations. This may result in a state of inadequacy since

a major goal of post-secondary teaching is to train a sufficient number of fully prepared replacements. In some fields, a lack of resources limits the recruitment of candidates. To this extent one can say that the supply exceeds the demand and, not unlike the post-war period fifty-five years ago, Canada will be faced with a societal choice before the end of the century: to invest rapidly in post-secondary education or to accept, as in the past, to recruit the necessary experts from abroad. The current situation of under-employment or mis-employment of some graduates is more an expression of delayed integration into the marketplace than of systemic unemployment and is a result of the circumstantial as opposed to structural factors.

The complex tangle of jurisdictions, rights, funding, policies, cultures, and communications in this country seems, at first glance, to constitute an insurmountable obstacle to the efficient and effective planning of the future of higher education. Such a view of the complicated Canadian landscape hides a basic and fundamental dimension which Canadian post-secondary institutions share with all universities of the Western world — the very quality, in fact, which has enabled them to play a leadership role in the development of Western civilization. Universities have been able to play such a role because history has always allowed them to resist domination by any single outside influence, be it civil or religious, by a process of counterbalancing external forces. Academic freedom, open research, liberal education thus became the major assets of the university. Canadian universities are in no danger of falling prey to some sort of military-industrial complex or of being conscripted into the narrow confines of a short-sighted state bureaucracy.

Nevertheless, the historical, constitutional, geographic, economic, and linguistic constraints which have shaped higher education in this country are viewed as a yoke which many institutions — students, professors and administrators — would like to shed. Chapters 2 and 3 in particular examine the burden of this yoke. There are some who prefer to look to the federal government to resolve the problems of Canadian higher education by surreptitiously extending its jurisdiction through funding, planning, and foreign relations. It is a case of history repeating itself for we have experienced this phenomenon time and again — and it occurred in the United States a whole generation ago, although Canadians claim to be so different. For others, the province remains the last resort, and any other intervention is neither desirable nor warranted

in spite of the common market atmosphere which has prevailed over our hemisphere for the past two centuries.

Despite one's opinion on the matter, research — reflections, inquiries, and reports — on post-secondary education in Canada constitutes a prosperous industry. What must be asked, however, is whether all this alchemy will finally lead to the philosopher's stone? For the time being, it would seem that the first challenge to be met is to dig deep and identify the hidden realities which exist but are so misunderstood from one university to another. The previous chapters commence this process. Thus, what is clear on this side of the Great Lakes becomes comprehensible on the other side of the Rockies. And vice versa.

A brief glance at the Canadian higher education scene today reveals an overly stable faculty which is suffering because of few additions and frequently no replacements. Communication in the form of scholarly dialogue does not yet unite all parts of the country; two distinct university communities exist; language is a problem. One dreams of a solution — resembling the situation in Switzerland, which is also a mosaic rather than a melting-pot country, notwithstanding its 26 provinces and the influences of its imposing neighbours.

Canadian post-secondary education programs and curricula are unquestionably well developed, well distributed, and available across the country. Student enrolment is increasing as social barriers of sex, race, and language are breaking down. Nevertheless, for educational purposes, a geographic handicap must still be overcome — namely, the vast territory which this nation encompasses and the distances between habitations. An examination of attendance rates, region by region, quickly accentuates the problem. Distance education has made a welcome appearance from abroad, but thus far it can only be described as a good landed immigrant not yet fully "naturalized."

Post-secondary educational institutions are experiencing a serious cultural mutation. Democratization of education thus reveals its true nature. Along with adjusting to the student population explosion, democratization of post-secondary education necessitates a redefinition of contents, structures, and modes of operation. The traditional hierarchy of academic disciplines has disappeared and programs, particularly those at the undergraduate level, no longer bear the standard of what until recently was considered the more

élite realm of "higher education." As Clark Kerr (1963) has stated, the only link between all parts of a multiversity is its . . . heating system! In the same humorous vein, he could have added that the only thing that students share in common on Commencement Day is a name of a degree — and perhaps not even that! [illegible]alization, professionalization, knowledge, and technical ability co[illegible]tidate and constitute a cultural broth which, however, gives promise of evolution and progress. The situation does, though, give rise to questions other than the "critical doubt" of the philosopher. How is this massive accumulation of knowledge to be assessed? How can the unavoidable conflicts among expectations, needs, and quality be reconciled? Who evaluates improvement and output of instruction? Individual fulfilment, social integration, and national development could become mere catch-phrases if Canadian institutions do not learn to evaluate their performance with rigour, and on a regular basis.

Is the "system" of post-secondary education in Canada too divided, too disorganized, too unaccountable? Can a clear vision of "national" coordination exist? Despite attempts to rationalize the system, it is precisely this diversity that has enabled universities in the past to make their contribution to the autonomy, liberty, and democracy of Western civilization. Such could be signs of maturity.

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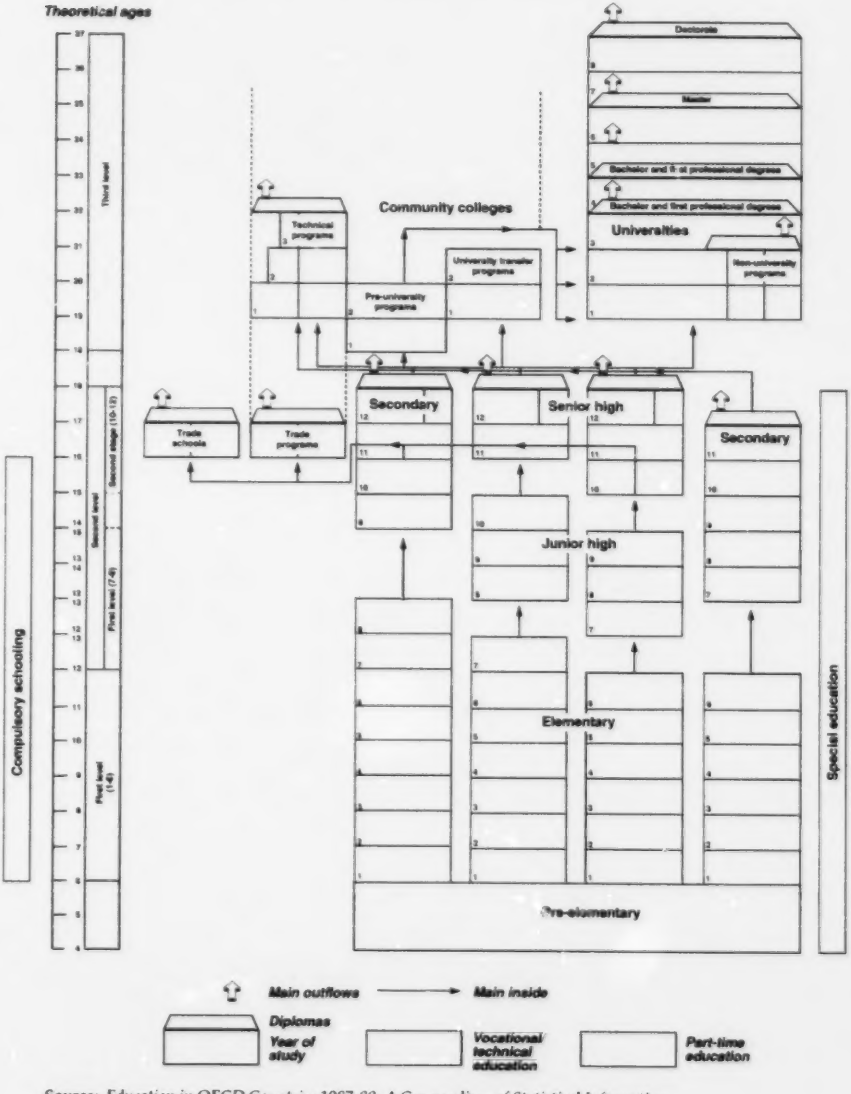
APPENDICES

General Structure of Education in Canada



Source: *Education in OECD Countries 1987-88: A Compendium of Statistical Information.*
Paris: OECD, 1990, page 125.
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KEY INSTITUTIONS AND ORGANIZATIONS

Association des universités partiellement ou entièrement de langue française (AUPELF), Université de Montréal, Case postale 6128, Succursale A, Montréal, Québec, H3C 3J7

Association of Canadian Community Colleges, Suite 200, 1223 Michael Street North, Gloucester, Ontario, K1J 7T2

Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa, Ontario, K1P 5N1

Canadian Association of University Teachers, 308-294 Albert Street, Ottawa, Ontario, K1P 6E6

Canadian Bureau for International Education (CBIE), 85 Albert Street, Suite 1400, Ottawa, Ontario, K1P 6A4

Canadian Commission for UNESCO, Box 1047, Ottawa, Ontario, K1P 5V8

Canadian Education Association, 252 Bloor Street West, Suite 8-200, Toronto, Ontario, M5S 1V5

Canadian Federation for the Humanities, 151 Slater Street, Suite 407, Ottawa, Ontario, K1P 5H3

Canadian Federation of Students, 300-126 York Street, Ottawa, Ontario, K1N 5T5

Canadian International Development Agency, Place du Centre, 200 Promenade du Portage, Hull, Québec, K1A 0G4

Canadian Society for the Study of Higher Education, 151 Slater Street, Suite 1001, Ottawa, Ontario, K1P 5N1

Corporate-Higher Education Forum, 1155 René-Lévesque Boulevard West, Suite 2501, Montréal, Québec, H3B 2K4

Council of Ministers of Education, Canada, 252 Bloor Street West, Suite 5-200, Toronto, Ontario, M5S 1V5

Department of the Secretary of State of Canada, Education Support, Ottawa, Ontario, K1A 0M5

Employment and Immigration Canada, Ottawa, Ontario, K1A 0J9
Industry, Science and Technology Canada, 235 Queen Street, Ottawa, Ontario, K1A 0H5

Medical Research Council of Canada, Jeanne Mance Building, Tunney's Pasture, 20th Floor, Ottawa, Ontario, K1A 0W9

National Research Council, Montreal Road, Administration Building, M-58, Ottawa, Ontario, K1A 0R6

Natural Sciences and Engineering Research Council of Canada, Centennial Towers, 200 Kent Street, Ottawa, Ontario, K1A 1H5

Royal Society of Canada, 207 Queen Street, P.O. Box 9734, Ottawa, Ontario, K1G 5J4

Social Sciences and Humanities Research Council of Canada, 255 Albert Street, P.O. Box 1610, Ottawa, Ontario, K1P 6G4

Social Sciences Federation of Canada, 151 Slater Street, Room 415, Ottawa, Ontario, K1P 5H3

Statistics Canada, R.H. Coats Building, Holland Avenue and Scott Street, Tunney's Pasture, Ottawa, Ontario, K1A 0T6

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Universities: Enrolment and Degrees. Ottawa: Statistics Canada, Catalogue No. 81-204, annual.

GUIDES TO CANADIAN HIGHER EDUCATION

Complete listings of provincial government departments and agencies as well as associations and institutions are available in the guides mentioned below.

The CEA Handbook / Le Ki-es-ki. Published annually by the Canadian Education Association. 252 Bloor Street West, Suite 8-200, Toronto, Ontario, M5S 1V5. 242 pages. (Contains full listings with addresses and telephone numbers of universities, colleges, federal and provincial government departments and agencies, education associations and organizations, and education periodicals.)

Commonwealth Universities Yearbook. Published annually by the Association of Commonwealth Universities, London, U.K.

Directory of Canadian Universities. Published biennially by the Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa, Ontario, K1P 5N1. 442 pages. (Contains a brief overview on the university system, full listings of universities, their programs, admission requirements, services, and statistical data on enrolments, staff and budgets.)

Going to Canada to Study: a practical guide for international students. Published by the Council of Ministers of Education, Canada. 252 Bloor Street West, Suite 5-200, Toronto, Ontario, M5S 1V5. 20 pages.

An Overview of Canadian Education, Fourth Edition (1991). Published by the Canadian Education Association. 252 Bloor Street West, Suite 8-200, Toronto, Ontario, M5S 1V5. 58 pages.

University Study in Canada. (Reference Series No. 36, 1989.) Published by the Communications and Cultural Branch, External Affairs and International Trade Canada. Ottawa, Ontario, K1A 0G2. 24 pages. (Contains information on admission requirements, financial assistance, immigration requirements, financing university study, travel procedures, life at a Canadian university, life in Canada, and degree-granting universities and colleges in Canada.)

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